SCR #	SCR Date	Status	SCR_Age	Title	Disc Date	Eq Fail	Event Date	Location	Unit
N-2020-08530	2020/07/10	COMPLETE	280	Project 16-31555 D2O Storage Project - ASME Code Cases 15151-5 and 2555-2 requiring CNSC acceptance	2020/07/10	N	2020/07/10		PRISMOD
N-2018-13572	2018/06/12	CLOSED	1022	P#16-31555 (D2O) Construction Proceeded without Regulatory Approval of Alternate Code Compliances	2018/06/07	N	2018/06/15	HWMB West Annex	PRISMOD
N-2018-04624	2018/02/15	CLOSED	1139	P#16-31555 - QA concerns regarding OPEX Level Indicating Meters (D2O Storage Project, HWMB West Annex)	2018/02/15	N	2018/02/15	HWMB West Annex	PRISMOD
N-2017-00789	2017/01/12	CLOSED	1528	DNRG2 - Vendor Relief Valve Calibration Records may not be acceptable as issued for OPG Relief Valve Program	2017/01/12	N	2017/01/12	QM Building	REFURB
N-2016-26786	2016/10/28	CLOSED	1614	Adverse Trend - Discovery Issues with OLW for the D2O Storage Project	2016/10/27	N	2016/10/17	D2O Storage Building	REFURB
N-2016-21186	2016/08/23	CLOSED	1680	Project #16-31555 - D2O Storage project: Civil Design Issues and trends	2016/08/22	N	2016/08/22	QM Building	PRISMOD
N-2016-00311	2016/01/06	CLOSED	1910	Procurement Oversight - 16-31555 D2O Storage Project	2015/12/17	N	2015/12/17		SC
N-2015-28301	2015/12/03	CLOSED	1944	Project 16-31555 - D2O Storage Project - TSSA Registration Response Package cannot be found by Design Agency	2015/11/16	N	2015/04/30	777 Brock Road, Pickering, Ontario	REFURB
N-2015-26627	2015/09/16	CLOSED	2029	D2O Storage Project 16-31555, EC 120421 R001, ASME Code Violations at 6-38110-MV1258	2015/09/16	N	2015/04/28	Future HWMB West Annex, EC 120421 R001	REFURB
N-2014-33616	2014/12/08	CLOSED	2304	PROJ 16-31555 Design Requirements for Grounding of Construction Power for HWMB-WA (Written PA) from 0-53600-T11 (External Power Supply) not available	2014/09/10	N	2014/09/10	HWMB-WA Construction Site (DNGS PA)	REFURB
N-2013-22218	2013/11/26	CLOSED	2661	Project 16-31555 - New REL Tag Generated by Contractor without OPG Drawing Office Involvement	2013/11/18	N	2013/11/15		REFURB
N-2013-04206	2013/08/08	CLOSED	2773	Nuclear Refurbishment use of ASME BPVC Code Cases and Non-Mandatory Appendices	2013/08/09	N	2013/08/06	Darlington Energy Complex - Engineering	REFURB
N-2013-03901	2013/07/08	CLOSED	2773	Configuration Management Issue Identified During Walkdown	2013/07/02	N	2013/07/02	Circulating Water Discharge Structure	REFURB
N-2012-06166	2012/03/16	CLOSED	2776	Project #16-31555 D2O Storage Design - Cancellation of Request for Proposal for Engineering Services	2012/03/13	N	2012/03/13		NRAPS
N-2011-06763	2011/08/01	CLOSED	2778	Specifying QA program and Pressure Boundary (BP) requirements on N-FORM-10029, Services - Request For Purchasing	2011/08/01	N	2010/03/11		SC
D-2015-28398	2015/11/11	CLOSED	1966	Inconsistent behaviour of alarms discovered during commissioning of HWMS Computers	2015/11/09	N	2015/11/06		TRF-NW
D-2014-32299	2014/11/20	CLOSED	2322	TRF: Lack of Project Readiness Significant Risk to T1501 Outage	2014/11/20	N	2014/11/20		TRF-NW
D-2014-27489	2014/09/30	CLOSED	2373	ECC Modification process deviation has been found in 15 out of 48 Design ECs being performed for D2O Storage Project	2014/09/09	N	2014/09/24		TRF-NW

SCR #	Cond. Descr	Action Taken	Recommended Resolution
N-2020-08530	During the review of Manufacturer Data Reports for pressure vessels in the HWMB West Annex Chilled Water system, it was discovered that ASME code case 15151-5 and 2555-2 were utilized in some of the vessels ... [illegible] ... The Project was not aware of the use of code cases until the Manufactured Data Reports review.	Consulted with subject matter experts in Pressure Vessels, Registrations, and Licensing. Initiated NK38-CORR-00531-21783 to the CNSC	MOOREPJ 2020/07/13 10:03: The cause is Lack of Attention to Detail and Procedural Compliance to identify/bring these Code Cases for CNSC review/approval. Recommend C3-NFE with actions to obtain CNSC approval on the draft letter, and document in Project Lessons Learned
N-2018-13572	The fire protection Code Compliance Review report (NK38-REP-78000-10065) for the HWMB West Annex contains information on alternative compliances applicable to the new building ... [illegible]	a) Review existing OPEX (including N-REP-09678-0661124); b) Review histories of HWMB West Annex ECs ... [illegible]	BANCAC 2018/06/12 21:30: To prevent this condition on future projects, I recommend C3 classification ... [illegible]
N-2018-04624	The affected conclusions lists were rejected by OPG design due to significant concerns regarding the accuracy and overall quality of Ohm meters ... [illegible]	N/A BANCAC 2018/02/16 08:31: Multiple meetings between OPG and EPC vendor took place to determine path forward.	BANCAC 2018/02/16 08:36: I recommend C3-NFE categorization with an action on OPG Supply Chain Quality Services to investigate if this is due to less than adequate implementation of the quality program by the EPC vendor.
N-2017-00789	It has been observed in various Refurbishment and DIO projects that there is no clear direction on Vendor expectations regarding meeting OPG's Relief Valve Program ... [illegible]	Notified VP Projects and Mods and VP of Engineering. Notified my line manager	- Recommend Refurbishment Program Owner of RV program to perform extent of condition ... [illegible]
N-2016-26786	Trend observed related to issues discovered with OLW prime wiring for the D2O Storage Project ... [illegible]	Drawing Office, OPG-DTL and Vendor working together to resolve each individual issue identified in the contributing SCRs ... [illegible]	POTVINDA 2016/10/28 12:23: 1. Present At Collaborative Engineering Meeting w/Vendor Partners an advocacy of Cable and EP standards affecting relating to On Line Wiring ... Recommend C-NFE
N-2016-21186	Reference: Project 16-31555 - D2O Storage Project (Heavy Water Management Building West Annex) ... [illegible]	Wrote this SCR at the request of the OPG Project Manager and Design Authority	Independent team should be assigned to investigate further. ZKIDR 2016/08/23 13:12: Recommend this for C2 evaluation ... [illegible]
N-2016-00311	Oversight was performed at AECON's Facility located at 154 Sheldon Drive, Cambridge, Ontario ... [illegible]	Informed FLM. Coached the JV with final/exit observations	SCAR 001101-00-00-SC-0218 has been issued for JV/ACON. CHEGHRS 2016/01/07 09:48: Observations were communicated to EPC Contractor's QA group. ... [illegible]
N-2015-28301	ROM-T Technologies was delegated by OPG to interface and submit registration packages to the TSSA on behalf of OPG for the D2O Storage project ... [illegible]	- OPG-DTL went through ROM-T turnover files and did not find a TSSA response package. ... - Filed this SCR	- Determine if Design Agencies record keeping and timely submission to OPG AST for registration correspondence ... [illegible]
N-2015-26627	Check valve 6-38110-MV1258 connects two piping sections operating at different pressures (see attachment A) ... [illegible]	New design vendor working on next revision of the EC was notified	As design for EC 120421 R002 has been transferred to a new design vendor, new design vendor has agreed to resolve issues and will revise affected documents, including Design Specifications, Design and OPPR Reports, etc. per ECC procedures. Follow CORE4 toolkit and INPO Principles for Excellence in Nuclear Projects Construction
N-2014-33616	Condition: Explicit design requirements / design basis document are not available (not established) for design of Construction Power (DEC 121376) ... [illegible]	1) Discussed issue with OPG Nuclear Refurbishment Design 2) Initiated this SCR	1. OPG design engineering to provide analyzed design requirements / design basis documents to address the issue of ground grid separation ... [illegible]
N-2013-22218	EPC generated a new equipment tag (0-38010-HT01) for DEC 120523 for the D2O Storage Project without OPG Drawing Office involvement. This was discovered by the OPG Drawing Office staff. See attached email.	- Notification was made to Nuclear Design Engineering by Drawing Office - Notification was made to Nuclear Refurbishment Design Engineering	KARN 2013/11/26 16:41: Notify Design Agency and ensure they are following procedure in the future. Extent of condition required. Disposition: C3-NFE, cause: procedure non-compliance, EO: KARN.
N-2013-04206	OPG Engineering Specification Standard N-TSM-04840-10002 Section 5.2.4 d) utilizes ASME Code Case N-62-7 for use ... [illegible]	Verbally contacted design engineer involved with valve design specifications for the D2O storage project to talk about the issue ... [illegible]	Suggest Refurbishment Licensing and Engineering as well as Nuclear Support - Codes and Standards develop a list of ASME BPVC code cases and Non-mandatory appendices ... [illegible] Disposition: C3-NFE, Cause: code application clarification required. EO: KARN
N-2013-03901	During a modification planning walkdown to support the D2O Storage Project Construction Dewatering Modification it was identified that the grating in the interspace between the CCW Discharge Gate and the Flash Ice Gate contains 2 openings which are not identified on the gate detail drawing NK38-DWG-21731-9013.	Upon completion of the walkdown, reviewed the drawings in detail to correlate the configuration management issue and raised SCR.	Complete a DCR to update gate detail drawing to reflect site layout. DEVAALC 2013/07/08: SCR should be treated as a C3-NFE as the apparent solution is to update detail drawing NK38-DWG-21731-9013.
N-2012-06166	On November 28th 2011 the D2O Storage project Request for Proposal (RFP) No.1-2011-003 in support of Engineering Services was issued to six proponents ... [illegible]	Notified Senior Management, indicated SCR, Supply Chain issued a cancellation letter to the proponents	Supply Chain to evaluate why the strategy was not successful. Projects and Supply Chain to agree on path forward to award the next phase of the Engineering work. Recommend C3 EO by Supply Chain.
N-2011-06763	QA program and pressure boundary requirements not clearly and concisely documented on some N-FORM-10029's reviewed. Examples include: ... [illegible]	Scope of Work Document QA requirements NK38-SOW-38000-10003 Section 6.0 "The Design Agency shall have in place a Design QA Program ..." [illegible]	C3 - NFE
D-2015-28398	While commissioning Phase 2 of the HWMS Computer Upgrade (Design ECs 124995, 124057) with work plan NK38-WPL-66691-00249?, two types of inconsistent behaviour were observed with alarms in the HWMS Computers ... [illegible]	Informed MTL and Section Manager. Project team is investigating. Engineer from control system vendor ABB is on site and is assisting with investigation. Systematic approach to problem solving meeting is scheduled for November 12, 2015	
D-2014-32299	Four projects are currently scoped in T1501 with on going significant risk to the T1501 outage due to project challenges ... [illegible] See attached document for project status for each T1501 Project	SCR filed to document repeated attempts to reinforce adherence to outage milestone recovery plans ... [illegible]	Projects to perform evaluation and develop corrective plan to recover T1501 TRF projects.
D-2014-27489	Following observations were found while performing MEL and BOM work on EC # 120485 Rev 001 against AR # 20?? ... [illegible]	Informed the concerned Section Manager	KHONDAKR 2014/10/01 10:29: This SCR raised to be "N" facility. Design agency was communicated about this issue and Exception memo is in progress for the use of the EC # 121327

SCR #	Initiator	Other Person Involved	Initiator Org	FLM	Initiating Mgr	Cat	Fire	Safety	Reportable	Affects Oper	Re-Work	PIR
N-2020-08530	Lu, Henry		N-NRDEOM	Moore, Peter	Sangalov, Vishal	C3-NFE	N	N	N	N	N	Sangalov, Vishal
N-2018-13572	Lu, Henry		N-PRMDPM	Bancu, Constantin	Cioletta, Anthony	C3	N	N	N	N	N	Cioletta, Anthony
N-2018-04624	JAJO, Faiz		N-PRMDPM	Bancu, Constantin	Cioletta, Anthony	C3-NFE	N	N	N	N	N	Cioletta, Anthony
N-2017-00789	DUTTA RAY, ANINDA		N-NRDPRM	Zaidi, Raza	Zaidi, Raza	C3-NFE	N	N	N	N	N	Zaidi, Raza
N-2016-26786	Kandiah, Krishan		N-NRDPRM	POTVIN, DAN	Zaidi, Raza	C3-NFE	N	N	N	N	N	Zaidi, Raza
N-2016-21186	DUTTA RAY, ANINDA		N-NRDPRM	Zaidi, Raza	Zaidi, Raza	C3-NFE	N	N	N	N	N	Cioletta, Anthony
N-2016-00311	Neeraurgh, Mahin		N-SCPOSM	Chonky, Shahed	Chonky, Shahed	C3-NFE	N	N	N	N	N	Chonky, Shahed
N-2015-28301	DUTTA RAY, ANINDA		N-NRDPRM	Zaidi, Raza	Zaidi, Raza	C3	N	N	N	N	N	Zaidi, Raza
N-2015-26627	GRANDE, LUCIO		N-NRDPRM	Zaidi, Raza	Zaidi, Raza	C3-NFE	N	N	N	N	N	Zaidi, Raza
N-2014-33616	MACK, DAN		N-PRMNPM	Read, Julian	Cioletta, Anthony	C3-NFE	N	N	N	N	N	Cioletta, Anthony
N-2013-22218	DUTTA RAY, ANINDA		N-NRDED	Kar, Arun	BEAUDETTE, BLAKE	C3-NFE	N	N	N	N	N	BEAUDETTE, BLAKE
N-2013-04206	*****	*****	N-NRDED	Kar, Arun	BEAUDETTE, BLAKE	C3-NFE	N	N	N	N	N	BEAUDETTE, BLAKE
N-2013-03901	Kirschbrunn, Brian		N-NRDEM	DE VAAL, CHRIS	Harris, Stuart	C3-NFE	N	N	N	N	N	Harris, Stuart
N-2012-06166	Tsimbouris, Vincent		N-PRDPDM	Makdessi, George	Makdessi, George	C3	N	N	N	N	N	Makdessi, George
N-2011-06763	Sorali, Mark		N-SCSPQSM	Platkov, Mihai	Platkov, Mihai	C3-NFE	N	N	N	N	N	Platkov, Mihai
D-2015-28398	Blundell, Harry		N-ECCDM	Cotter, Tim	Fichman, Bobby	C3	N	N	N	N	N	Fichman, Bobby
D-2014-32299	*****	*****	D-DRCTRPM14	Wong, Thomas	Hamilton, Kenneth	C3-NFE	N	N	N	N	N	Hamilton, Kenneth
D-2014-27489	Mahbub, Emad		N-NRDEM	Khondaker, Wahlab	Laskina, Rajeev	C3	N	N	N	N	N	Laskina, Rajeev

SCR #	Diff Rev Than Initial	Diff Sig Than Initial	EO Mgr	Evaluator	Eval Org	Sending Orgs	CA Plan Due Dt	CA Plan Completion Dt	CAP Due Dt	SCR Flow	Coordinator	Coordinator Comments	Vend Hist	Vend CAP INOF	Vendors
N-2020-08530	ZMCKLA 2020/07/14 11:36: SCR initiated to document it was discovered that ASME code case 15151-5 and 2555-2 were utilized in some of the vessels ... [illegible]		Moore, Peter	Peter Moore [redacted]	N-PRMDPM	N-NRDEOM, N-PRMDPM	7/28/2020	7/17/2020	2020/07/28	N	Zhou, Justin		Both		CANATOM
N-2018-13572	BUTOKG 2018/06/13 14:26: Construction Proceeded without Regulatory Approval of Alternate Code Compliances. Apparent Cause Evaluation (C2) required.		Cioletta, Anthony	Joe Wood [redacted]	N-PRMNPM	N-PRMNPM	7/11/2018	7/13/2018	2018/08/13	N	Buko, Gefeta		Geevce		CANATOM, SC-CONNEXUS?, SNCLAVALIN JV
N-2018-04624	BUTOKG 2018/02/23 06:31: NFE - cause documented. Actions required to address the cause. Apparent Cause is: CF-04 Quality Control (QC) Functions ... [illegible]		Cioletta, Anthony	Gefeta Buko [redacted]	N-PRMNPM	N-PRMNPM	3/16/2018	2/26/2018	2018/03/16	N	Buko, Gefeta		Geevce	2018/541 58	CANATOM, CUSTOMCONT, SNCLAVALIN
N-2017-00789	KANDIAHK 2017/01/16 14:37: C3-NFE: CF-MC design change prepared using inaccurate or incomplete documentation ... [illegible]		LIAO, THOMAS	Balbir Batter [redacted]	N-NRDECSM	N-NRDPRM, N-NRDCSM, N-NRDOPM	2/16/2017	2/13/2017	2017/02/15	N	Ecknol, Robert		N		
N-2016-26786	KANDIAHK 2016/10/28 15:32: C3-NFE accepted by NR Design Engineering. Apparent Cause: CF-A - Communications ... [illegible]		Zaidi, Raza	Raza Zaidi [redacted]	N-NRDPRM	N-NRDPRM	11/25/2016	11/18/2016	2016/11/25	N	Kandiah, Krishan		Geevce		SNCLAVALIN
N-2016-21186	YORKCB 2016/09/02: Refurb Screening meeting changed disposition of this SCR as a C3. KSLINGR 2016/09/15 10:38: As per MRM of C3/Sept16, SCR re-categorized to C3-NFE. Apparent Cause is: transfer of design accountability (ECs 120471, 120343, 121146) from one design agency to another during field execution		Cioletta, Anthony	Mansoor Ahmad [redacted]	N-PRMNPM	N-NRDPRM, N-PRMNPM	9/30/2016	9/29/2016	2016/09/30	N	Taylor, Shelley		Geevce		ROMTECHNOLOG, PC-BLACKMCDONAL, PC-ELLISDON(CG), SLNNECCONAC?, NWECPOEF?
N-2016-00311	HEERAGRR 2016/01/11 16:12: NFE - cause documented. Actions required to address the cause. Apparent Cause is: Vendor Quality		Chonky, Shahed	Shoaib Tulesvaragan [redacted]	N-SCPOSM	N-SCPOSM	2/8/2016	1/12/2016	2016/02/08	N	Neeraurgh, Mahin	SCQA to investigate this condition, determine if this is due to less than adequate implementation of the quality program by the supplier, and issue an NCAR as appropriate. Completion of this assignment will be based on a referenced NCAR or justification as to why no NCAR was issued. This assignment was accepted by Josh group # N-SCSPQSM on 11-Jan-2016.	Both		EPCMSNSCFN?
N-2015-28301	ADDORIA 2015/12/15 13:53: C3 ACE accepted by EO Manager		Zaidi, Raza	Paul Boiskis [redacted]	N-NRDPRM	N-NRDPRM	1/26/2016	1/25/2016	2016/01/26	N	Addorisio, Anthony		Geevce		ROMTECHNOLOGI
N-2015-26627	ADDORIA 2015/09/16 13:47: C3 ACE Accept by Robert Walds acting for Raza Zaidi		Zaidi, Raza	Paul Boiskis [redacted]	N-NRDPRM	N-NRDPRM	10/14/2015	10/14/2015	2015/10/14	N	Addorisio, Anthony		Geevce		ROMTECHNOLOGI
N-2014-33616	WARDAN 2015/01/14 06:30: NFE - cause documented. Actions required to address the cause. Apparent Cause is: LTA Design requirements		Zaidi, Raza	ANINDA DUTTA RAY [redacted]	N-NRDPRM	N-PRMNPM, N-NRDPRM	2/24/2015	2/10/2015	2015/02/24	N	Ward, Andrew		Geevce		ROMTECHNOLOG
N-2013-22218	MATHEWK 2013/11/27 10:12: Cause known, Change Management. Human Performance. Procedure non-compliance (N-PROC-MP-0077). Did not verify with Drawing office before finalizing the equipment tag ID in the change management process ... [illegible]	MATHEWK 2013/11/27 10:12: Not significant by itself, but has potential	Kar, Arun	ANINDA DUTTA RAY [redacted], Arun Kar [redacted]	N-NRDEM	N-NRPEO, N-NRDEM	1/6/2014	1/6/2014	2014/01/06	N			Geevce		BLACKMCDONAL, ROMTECHNOLOGY
N-2013-04206	Cause Known (CF-B2, Technical Procedure): Code clarification not available in documentation, needs to be obtained from Codes & Standards. No Procedure exists.	MATHEWK 2013/08/16 Not significant by itself but has potential	Kar, Arun	Monica Juan [redacted]	N-NRDEM	N-NRPEO, N-NRDEM	8/16/2013	9/4/2013	2013/09/16	N			Both		ROMTECH
N-2013-03901	Cause known, legacy issue, documents affected by change in the field was not revised. CF-J	MATHEWK 2013/07/10 Not significant by itself but has potential	Kar, Arun	Monica Juan [redacted], Arun Kar [redacted], Cora [redacted], CHRIS DE VAAL [redacted]	N-NRDEM	N-NRDEM	8/7/2013	8/6/2013	2013/08/07	N			N		
N-2012-06166	Apparent Cause Evaluation required.	Has potential to be significant	Makdessi, George	George Makdessi [redacted], Charles Massey [redacted]	N-PRDPDM	N-PRDPDM	2/25/2012	2/24/2012	2012/02/25	N	Massey, Charles				
N-2011-06763	NFE - cause documented. Actions required to address the cause. Apparent Cause is: Less than adequate N-FORM template. Not adequate for quality program requirement detail. TAA 2011/08/29: Apparent Cause: Enhancement recommendation to N-FORM-10029 & N-FORM-11361		De Burbon, Rafael	Umar Irani [redacted]	N-SCSSM	N-SCSPQSM, N-SCSPQSD, N-SCSSM	10/8/2011	9/30/2011	2011/10/08	N	Moorhead, Karen	CO concurrence not obtained from N-SCSSM. N-FORM-10029 (Services - Request for Purchasing) is owned by Josh group N-SCSPQSD			
D-2015-28398	JUNGE 2015/11/16 06:22: Issue under investigation. JUNGE 2015/11/17 06:18: Apparent cause evaluation required.		Fichman, Bobby	Tim Cotter [redacted], Kevin McKay [redacted]	N-ECCDM	N-ECCDM	12/15/2015	12/15/2015	2015/12/15	N	Jung, Samuel		N		
D-2014-32299	KEMBEGYR 2014/11/26 07:45: NFE - cause documented. Actions required to address the cause. Apparent Cause is: CF-Q3 Insufficient development, coordination and execution of Project recovery plans. - Issuance of recovery plans required to satisfy deficiency documented in SCR.		Butschneck, Roy	Andrew Ward [redacted]	N-PRDPDM	D-DRCTRPM14, N-PRDPDM	12/17/2014	12/16/2014	2014/12/16	N	Kennedy, Ricki		Geevce		BLACKMCDONAL, ROMTECH
D-2014-27489	MATHEWK 2014/10/02 07:52: Requires discussions involving the contractor's QA Manager, identify corrective actions needed to address the issues affecting product quality. N-NRDPRM has accepted C3 Evaluation responsibility	MATHEWK 2014/10/02 07:52: Not significant by itself. But has potential	Zaidi, Raza	Michael Cutler [redacted]	N-NRDPRM	N-NRDEM, N-NRDPRM	10/30/2014	12/1/2014	2014/12/01	N		As per discussions with the Section Manager, related human performance issues include lack of procedural compliance to N-GUID-00700-10000, as well as other referenced procedures N-PROC-MP-0030 (BOM process). Inadequate use of tools such as self checking and peer review and verification also have contributed to it. Expect to get more details during SCR evaluation	Geevce		ROMTECH

SCR #	Ext WANO	Ext COG	Ext NIA	Ext IFE	Int PA	Int NA	Days At MRM	SCR Reviewed	MRM Review Dt	MRM Comments	Line Management Concurrence
N-2020-08530	N	N	Y	N	Y		1		7/14/2020		LL-CON-PI-ENG; ENG-QA-HW; NEC - WP; NIE
N-2018-13572	N	N	Y	N	Y		1		6/13/2018		PROC-NC; CON-PI-ENG; CON-PI-NP
N-2018-04624	N	N	Y	N	Y		7		2/23/2018		CON-PI-MAT
N-2017-00789	N	N	Y	N	Y		4		1/16/2017		
N-2016-26786	N	N	Y	N	Y		0		10/28/2016		OLW; CON Eng Quality
N-2016-21186	N	N	Y	N	Y		5		9/2/2016	retuned to MRM for Screening chair disposition	CL-EA
N-2016-00311	N	N	Y	N	Y		4		1/11/2016		MATa-SUPQA
N-2015-28301	N	N	Y	N	Y		12		12/15/2015		CON Eng Quality
N-2015-26627	N	N	Y	N	Y		6	Y	9/16/2015		CON Eng Quality ENG Rework, DEN-CON
N-2014-33616	N	N	Y	N	Y		27		12/7/2015		
N-2013-22218	N	N	Y	N	Y		1		11/27/2013		
N-2013-04206	N	N	Y	N	Y		8		8/16/2013		OPG Oversight
N-2013-03901	N	N	Y	N	N		2		7/10/2013		OPG Quality
N-2012-06166	N	N	N	N	N		9		7/26/2012		MS-PM
N-2011-06763	N	N	N	N	N		9		8/9/2011		MAT-CONTRACT, MAT-PACKAGE, MAT-PO, MAT-PROCS
D-2015-28398	N	N	Y	N	Y		6		11/17/2015		PROBCON, QUA-ASSUMPTIONS, QUA-CONTRACTOR
D-2014-32299	N	N	Y	N	Y		5		11/26/2014		
D-2014-27489	N	N	Y	N	Y		1		10/2/2014		CON ENG WR

SCR #	Discussion of Facts	Conclusions	Previous Similar Condition	Analysis Methodology	Action Reqd	Coordinator Disposition / Discussion With Initiator	Initiator Req	% Power	Has Attachments
N-2020-08530	N/A	N/A	N-2016-18227, N-2013-04206	N/A	28214972	Initiator contacted for input.			N
N-2018-13572	Entered on behalf of Constantin BANCA. On September 15, 2016, civil construction of the Heavy Water Management Building (HWMB) West Annex began without regulatory approval of alternate fire code compliances ... [illegible] Immediate/Interim Actions Taken: Review of existing OPEX (including N-REP-09678-0661124); Review histories of HWMB West Annex ECs (NEC 69329/NEC 118906) ... [illegible]	Consequences of Event: The consequence of this event is the risk of new building (HWMB West Annex) not being in compliance with the fire safety requirements stipulated in the project Modification Design Requirements (NK38-MDR-38000-10003). Apparent Causes: Knowledge gap, combined with non-prescriptive contractual requirements, is the apparent cause for this adverse condition. Contributing Causes: Lack of awareness of the protection requirements and their impact on "routine" design and construction work was a contributing factor.	The two SCRs initially identified (N-2017-08494 and N-2016-00707) were relevant to this evaluation ... [illegible]	The Apparent Cause Evaluation was completed by performing the following: Discussions and/or information gathered from the OPG Project manager, Design Managers, Design Team Leaders (DTL) and design engineers for both OPG and Candu / SNC-Lavalin (11 staff in total). Barrier Analysis Worksheet N-FORM-10134 completed (see attached)	28210004				Y
N-2018-04624	N/A for NFE SCRs	Problem Statement: While assessing the results of Factory Acceptance Test (FAT) for multiple control panels required for D2O Storage Project, HWMB West Annex project, investigation by OPG revealed the lack of QA level documentation for the same components ... [illegible] Apparent Cause: Less than adequate implementation of the quality program by the supplier. Risks: No adverse consequences at this time as the panels are still with the supplier and they will be qualified via AQ quality augmentation process. Corrective Actions: Supply Chain will investigate this condition and determine if this is due to less than adequate implementation of the quality program by the supplier. They will issue a NCAR as appropriate or provide justification as to why no NCAR is required.	N/A for NFE SCRs	N/A for NFE SCRs	28210440		N	NA	Y
N-2017-00789	OPG's Relief Valve (RV) Program is managed by strict governance that is audited by the TSSA ... [illegible]	Based on the multiple occurrences where RV's set to be installed are not acceptable under the RV Program, it is clear that Program requirements have not been adequately understood by project teams.	Three RV's were installed as part of the D2O Upgrading Project (#73413) prior to being accepted into the RV Program ... [illegible]	N/A	28188256		N	0	N
N-2016-26786	N/A	N/A	N/A	N/A		Initiator contacted for input.			Y
N-2016-21186	N/A for NFE SCRs	There are several design issues for the D2O Storage project, as noted in the 'Condition Description'. These issues have adverse impact on cost, schedule and quality of the project. Two different design vendors and their sub-vendors have been involved. The issue of water ingress is addressed separately by AR 28185408 (N-2015-20616). Detailed review of the design is required to be conducted by an independent third party to evaluate the design and recommended appropriate corrective actions.	N/A for NFE SCRs	N/A for NFE SCRs	28183761	Not Applicable for No Further Evaluation Only.	N	NA	Y
N-2016-00311	Purchase order# 4500042197 (Dubose National Engineering Services), Purchase order# 4500040311 (Pinnacle Stainless Steel, Purchase order Niagara Fasteners and Purchase order Consolidated Power were reviewed	N/A	N/A	N/A	28165395			NA	Y
N-2015-28301	ROM Technologies was delegated by OPG to interface and submit registration packages to the TSSA on behalf of OPG for the D2O Storage project ... [illegible]	Primary Barriers that failed: There were two barriers that failed: Questioning Attitude and validation of assumptions ... [illegible]	A search of the SCR database, for all sites, the following SCRs are relevant to this condition since they describe TSSA documentation issues ... [illegible]	Barrier analysis methodology was used to evaluate the apparent cause. This CAP was prepared by Aninda Dutta Ray and was entered on his behalf	28165343	Initiator contacted for input.	Y	NA	Y
N-2015-26627	PROBLEM STATEMENT: Design EC 120421, R001 contains five (4) known ASME Sec. III, ND-3612 non-compliances and an NCA 3220 (m) non-compliance. The design is not in full compliance with the ASME code for class 3 piping design. ... [illegible]	For the barrier analysis, the apparent causes are: 1) lack of adequate verification activities during the sign off of the flow diagrams and OPPR ... [illegible]	The SCR data base was searched for similar issues ... [illegible]	Barrier Analysis used (N-FORM-10134, Barrier Analysis Worksheet is attached)	28161961	Initiator contacted for input.			Y
N-2014-33616	Explicit design requirements/design basis documents not available and not/(not) established for design of Construction Power (DEC 121735) grounding system where external power supply (NEF - Utility power) is to be used for HWMB-WA construction power inside DNGS PA. ... [illegible]	The apparent cause of the condition is attributed to: Issues already identified in N-2014-22830 and being resolved under D-2014-34792 A/R 28173808 assigned to D-PDDM	N-2014-22830 - RFR/SA Project 0-53600-T11 Grouding Design Requirements Unclear; D-2014-34792 - Unintended connection between Station and Facilities ground grids	Systematic Approach to Technical Problem Solving already completed under A/R 28170433 Assignment 1. ACE not required since root issue already documented under D-2014-34792 and N-2014-22830 and action underway A/R 28173808.		Initiator contacted for input.	Y	NA	Y
N-2013-22218	EPC contractor generated a new equipment tag (0-38010-HT01) in the OPGN Master Equipment list (MEL) for Design EC 120523 for the D2O Storage Project without OPG Drawing Office involvement.	Equipment tags are issues by OPG Drawing office which is the single source in order to avoid duplication of e-tags and loss of configuration management. It is important to maintain a single source for issuing e-tags. This process is governed by OPG Engineering Change Control (ECC) process (see N-GUID-0070-10000). Coaching is required for contractor Design staff in order to ensure that OPG Drawing office is used as the single point of contact for all new equipment tags in the future.	No further evaluation (NFE). An review of extent of condition EC 120523 and other related ECs were reviewed for other equipment tags that may have bypassed the Drawing office - None found	No further evaluation (NFE).	28163379	Initiator contacted for input.		NA	Y
N-2013-04206	C3-NFE - No further evaluation is required as per N-PROC-RA-0022. This SCR is dispositioned as C3-NFE as it is a CNSC license "accepted code cases" clarification issue which has a pre-defined action.	C3-NFE	C3-NFE	C3-NFE - No further evaluation is required as per N-PROC-RA-0022	28154759	Initiator not reachable. His/her immediate supervisor contacted.	N		N
N-2013-03901	C3-NFE - No further evaluation is required as per N-PROC-RA-0022. This SCR was dispositioned as C3-NFE as the apparent cause is configuration management issue identified during a walkdown.	C3-NFE	C3-NFE	C3-NFE - No further evaluation required as per N-PROC-RA-0022	28150665	Initiator contacted for input.	Y	NA	N
N-2012-06166	Problem Statement: Second submission of Request for proposal (RFP) was cancelled due to proponent unwilling to comply with Terms & Conditions (T&C)/Mandatory Criteria which resulted in Projects schedule delay by 8 weeks ... [illegible]	The apparent cause is combination of: a) a simplified process to expedite the RFP did not work as anticipated, and b) OPG process i.e. T&C (Terms & Conditions/Mandatory criteria) was less inflexible and did not reflect or take into consideration the market's willingness to accept requirements. ... [illegible]	"Power Search" was used to search all 3 data bases from Jan 2006 -Jan 2012 (Pickering, Darlington and NOES) with the following relevant outcome: SCR N-2011-05630 and N-2011-04242	Detail discussion with the consultant Project Team i.e. Design Projects and Supply Chain. This apparent cause evaluation was completed using Barrier Analysis, N-FORM-10134 see attached.	28138659	Initiator contacted for input.		NA	Y
N-2011-06763	Lack of clear and concise QA program and pressure boundary requirements in several N-FORM - 10029 reviewed, related projects if and titles include but not limited to: ... [illegible]	Completion notes for actions completed before CAP approval: corrective actions are planned and are assigned to rectify adverse condition.	Site SCR databases (Pickering/Darlington/Nuclear Support) were used to search previous similar events ... [illegible]	Actions taken - Scope of Work document NK38-SOW-38000-10003 revised to include the QA requirements (Section 6 and section 12). ACE Methodology - Apparent cause is lack of clarity on QA and PB requirements in SOW, which requires enhancement recommendation to N-FORM-10029 & N-FORM-11361. No further evaluation is needed.	28122944				N
D-2015-28398	PROBLEM STATEMENT: Commissioning of the 800xA software for the HWMS Computers in the T1501 TRF outage identified undesirable behaviours in two areas related to alarm handling. ... [illegible]	PRIMARY FAILED BARRIER(S): Unavailability of field I/O hardware in the testing and development of 800xA software ... [illegible]	SCR SEARCH: P-2011-24622 - Mxto issues with EPGI commissioning ... [illegible]	Kepner-Tregoe (K-T) problem solving established a series of tests to help understand the behaviour of the software. An ABB technical expert was also available onsite during this process. A barrier analysis was prepared based on the up-to-date findings of the K-T process. The barrier analysis is attached to this SCR.	28163862			NA	Y
D-2014-32299	Problem Statement: This SCR is being raised to document the lack of project readiness posing significant risk to T1501 outage. ... [illegible]	Not required as per N-PROC-RA-0022	Not required as per N-PROC-RA-0022	Not required as per N-PROC-RA-0022	28173601				Y
D-2014-27489	This SCR identifies the following four issues: (1) EC were approved without having MEL update completed ... [illegible]	Primary Barrier (s) that failed: The following primary barriers failed: EC04 Panel AEL Reviewed Button were checked off when the AEL entries were not complete and were not Reviewed by the MEL Updater ... [illegible]	SCR search was performed for ECC process non-compliance for D2O project by MSA vendor ROMTECH. Following SCRs were identified: D-2013-17068, D-2013-04430 and D-2013-05217. These SCRs were considered in preparing the CAP for SCR D-2014-27489	Barrier Analysis was used for the evaluation.					Y

SCR #	SCR Date	Status	SCR_Age	Title	Disc Date	Eq Fail	Event Date	Location	Unit
D-2014-17724	2014/05/08	CLOSED	2441	16-31555- D2O Storage Project. Light Standard Knocked Over By Truck (Duplicate Of N-2014-15070)	2014/05/08	N	2014/05/08	C13 East of power house	0
D-2014-04964	2014/02/12	CLOSED	2953	TRF: Field/Flowsheet/Database Discrepancy: NK38-FEX-75550-0001	2014/02/07	N	2014/02/07		TRFWM
D-2013-24454	2013/12/18	CLOSED	2959	TRF Stack emissions exceeded target	2013/12/18	N	2013/12/18		TRFWM
D-2013-21747	2013/11/15	CLOSED	2992	Project 16-31555 - D2O Storage Project - Non Compliance with Modification Process (COMS)	2013/11/14	N	2013/11/14		0
D-2013-19100	2013/10/28	CLOSED	2709	T1321 further delays relating to D2O storage project	2013/10/29	N	2013/10/24	TRF/HWMB	TRFWM
D-2013-18196	2013/10/22	CLOSED	2719	Project 16-31555 - Dewatering Line installed in path of Emergency Mitigating Route 3 documented in NK38-EME-09613-ERG4/2 Appendix B.	2013/10/22	N	2013/10/20	Darlington NGS - Yard - Gate 3	0
D-2012-08890	2012/09/07	CLOSED		Project #16-31555 D2O Storage: Lack of schedule from contractor	2012/09/07	N	2012/09/07		0
N-2020-10258	2020/07/28	COMPLETE	245	DNNUS - Proj 16-31555: Questions from CNSC on NK38-CORR-00531-21783	2020/07/24		2020/07/24		REFURB
N-2020-04843	2020/03/30	COMPLETE	365	DNR - Proj 16-31555: Preliminary Results - HWMB West Annex Seismic Dike - Review and Analysis	2020/03/27		2020/03/27		REFURB
N-2019-15049	2019/08/03	CLOSED	574	16-31555, D2O Storage Facility - Foreign Material Intrusion identified during Hydrostatic Testing on prefabricated NC3 piping system.	2019/08/27	N	2019/08/27		PRMOD
N-2018-09406	2018/04/25	CLOSED	1075	16-31555, D2O Storage Facility: Product Quality Issue - Change Control process to the ITP has not been maintained.	2018/04/19	N	2018/04/19		PRMOD
N-2018-01716	2018/01/22	CLOSED	1163	16-31555 - D20 project - HVAC temporary flexible ductwork flange came apart	2018/01/22	N	2018/01/22	west annex - 100 elevation	PRMOD
N-2017-25610	2017/11/15	CLOSED	1231	16-31555 D2O Storage Facility - Human Performance Event: Foreign material discovered in HWMB piping during spool installation.	2017/11/14	N	2017/11/13	HWMB	PRMOD
N-2017-08623	2017/04/04	CLOSED	1456	DNRU2 D2O Storage 16-31555: Late elevation request from valve supplier after valve is in service 0-38110-V941	2017/03/21	N	2017/03/03		REFURB
N-2017-08135	2017/03/13	CLOSED	1476	FB 16-31555 (D2O) Pipe Chase Leak (EC 123130, HWMB West Annex)	2017/03/13	N	2017/03/13	HWMB West Annex El. 93 to El. 98	PRMOD
N-2017-05069	2017/02/28	CLOSED	1491	Project # 16-31555 HWMB West Annex: Newly installed manual diaphragm valves require adjustment of travel stop	2017/02/09	N	2017/02/08	HWMB West Annex 93m elevation	PRMOD
N-2017-01705	2017/01/16	CLOSED	1534	16-31555 D2O West Annex - Procedural Non-Compliance - Drilling without a CDAC	2017/01/13	N	2017/01/13	D2O West Annex Project	PRMOD
N-2016-30602	2016/12/10	CLOSED	1571	16-31555 - Sparks Ignited Slag Causing fire (MEW)	2016/12/10	N	2016/12/10		PRMOD

SCR #	Cond. Descr	Action Taken	Recommended Resolution
D-2014-17724	This is a DUPLICATE of SCR N-2014-15070 filed on 2014/05/08. OMG requested that a SCR be filed under Darlington data base as well as N. Truck driver was maneuvering truck into place to pick up tote to remove from site. Spotter was being utilized at rear of truck. As the driver tried to maneuver into position to pick up a tote, he misjudged his distance and made contact with a light standard directly in front of the truck and the light standard tipped over until attached to one side of the concrete base. Truck was shut off, supervisor called, area secured.	Called supervisor, who called OMG who called Cities. Cones were placed around truck and caution tape installed. Shifter came down to inspect, and we discussed path forward. It was deemed that we should inspect cables in daylight to ensure there is no electrical hazards. Incident area is contained by P fence with a secured gate. Safety to be notified in the morning.	LUKTONS 2014/05/12 10:45 - HSEL presented to PCC and PCMD outlining lack of situational awareness by the driver of the truck. Actions taken to improve error prevention include: Contractor Logistics coordinator will be in attendance at pre-job briefings prior to pick-up of totes; a walk down will be performed of all totes that are to be removed prior to pick up to identify hazards and plan a safe path of travel; revision of the contractors "Equipment Operation Refresh for Sub-Contractors on site"; Contractor conducted a Situational Awareness stand down reinforcing the dangers of distracted driving, and roles and responsibilities of all sub-contractors were to be developed to identify who each sub-contractor reports to as well as the contractual obligations. LUKTONS 2014/05/12 11:14 - This event has been designated a High MRPH. LUKTONS 2014/05/13 07:56 - Tote work was approved to resume on May 12th.
D-2014-04964	In review for D2O Storage Project walk (16-31555), it was identified that the vendor equipment shown on NK38-FEX-75550-0001 that is not operated nor maintained by OPG, is incorrect. Valve naming on the flowsheet does not match the vendor names/values and some components are missing/incorrect. This is a legacy issue, but there is no impact to system operation given equipment is vendor owned, operated and maintained.	SRE was notified of the discrepancy and consulted with for the recommended path forward to update the flowsheet. In addition, WO# 4741610 has been generated to perform the NK38-FEX-75550-0001 11 walkdown. 17Feb2015	Agreed path forward with TRF management and SRE is: 1. Note should be added to the existing flowsheet that the vendor equipment is not updated and will be following issuance of NK38-DRAW-75550-10001 002. There is no impact to system operation given equipment is vendor owned, operated and maintained. 2. When NK38-DRAW-75550-10001 002 is issued or Pass/Fail/Accel Suite following EC 122210 (Argon Tank Relocate) AFS, the SRE will provide a flowsheet markup to TRF Ops Support for processing. TCR DA0023930 has been created to revise the flowsheet to address the legacy issues. This TCR will be dealt with separate from TCR DA0022693 for the D2O Storage Project Argon Tank Relocation per DEC 122210.
D-2013-24454	The daily stack change out reported that total T2O emissions for the 24 hour period ending at 12:30 today (Dec 18, 2013) were 19.61 Ci. This exceeded our target of 5 Ci.	High emissions were expected. The previous night shift unloaded TDO 2 and 4 to the rundown 500 system. This is a slow transfer, about 8 hours long, and requires the tanks to be vented throughout. During the transfer, the stack drains were received and peaked around 20 µCi/m³ HTO on R1000.	This particular transfer will elevate emissions due to design. Normally, TDOs are unloaded to 38110-TK11 which produces less emissions. The ultimate solution is to install a stack dryer. [illegible] 2013/12/18 13:01: This emission was expected, and documented in D-2013-22466. This was the last transfer of water from the TDO, and TRF will not accept any more transfers until TK 11 is accessible. Currently TK 11 is unavailable due to the storage of downgrade water in the tank from the leakage of water from the D1121 outage. This has not been flushed, as a work protection permit is required to be placed on the tank to allow for a D2O storage project tie in. The tank is required to remain at a low level for this period.
D-2013-21747	As per N-PROC-MP-0090 and N-PROC-MP-0093, all stakeholders must sign the Part 5 Detailed Design Phase Stakeholder Declaration on a COMS form (N-FORM-10507) prior to the end of Detailed Design. At present, there are ECs for the D2O Storage Project that are in APPROVED state where Part 5 of the COMS form was not signed off by required stakeholders. For example, this includes EC# 120425 and 120427. Since Section 5.0 of the COMS form (N-FORM-10507) represents concurrence from the stakeholders (including Operations and the SRE) that the design is ready for approval, not following this procedure represents a significant deviation to the modification process.	Initiated this SCR and contacted OPG Project Manager to assist in resolving this issue.	Please ensure completion of modification deliverables as per N-PROC-MP-0090. This SCR should be considered for evaluation to determine extent of condition for this project.
D-2013-19100	D2O storage project reports a high confidence date of Nov 28 to perform LPSW tie-ins. This is an additional push of 25 days. Previous date was Nov 4, and original date was Oct 5th. This will impact TRF restart date. TRF Outage restart date was originally Dec 24, 2013 & then moved to Jan 14 and now possibly Feb 8 2014 to accommodate D2O storage projects failure to meet milestones / targets. There are also impacts to other work groups / projects that were scheduled to be performed in this time slot. IE - ABB (OEM) performing computer vault updates, E & M performing ACS project updates. [illegible] The additional push to perform the D2O Storage Project LPSW tie-ins results in a 33 day delay from Oct 5th. The impact to the TRF restart date is Feb 24, 2014, not Feb 8. The Feb 24, 2014 date includes finding one week of efficiencies during the TRF outage to recover time.	Captured possible consequences of a delayed TRF restart. This will impact detrit services to all Ontario Candu units and may/will impact commitments with respect to HSEC & tritium levels.	Perform a review of the D2O storage project and capture lessons learned to prevent further delays to the completion of this project & start of Refurb.
D-2013-18196	During review of daily issues for the D2O storage project for October 20, 2013 provided by the PM, it was noticed in a photo of current construction that the dewatering pipe for the project was running across road (between the DTS Fuel management building and EPG2) and the ramp design that was supposed to be used by Aquatech was not installed as per DEC 123123 where the road was to be free of obstructions. EME-G1 and EME Pump transport Route 3 using the gate and road is documented in NK38-EME-09613-ERG4/2 Appendix B and it is not known how this present installation is acceptable during an emergency. The procedure states that this a path that could be used in an emergency but 'tribal knowledge' being used to say that the gate is never used to make decisions. This is a field execution issue not following accepted design.	Notified PM, and WTLs	- Follow design and install ramp. OR - Seek input from the ERE department to determine if Route 3 can be considered no longer available; document decision and change design accordingly to go from ramp design to design of a pipe on the road.
D-2012-08890	[redacted]	Informed line management. Accepted action to vendor to provide a schedule at weekly project meetings. Filed SCR.	Continued line management engagement on this issue, and higher level discussions with contractor management regarding their contractual obligation to provide a schedule and to disposition OPG comments. [illegible] Recommend B&M perform ACE and implement a corrective action plan. Darlington Design Projects to be the EO.
N-2020-10258	Per SCR N-2020-09536, NK38-CORR-00531-21783 was submitted to the CNSC. Questions from the regulator were received subsequently. Upon review of the question and consultation with the OEM, a number of issues are identified: a) For CRN-R2604.5, some data reports have 1 code case while some have 2 code cases. b) For CRN 0A669.5C, the data report states Hydro Tested and DR does not show CCs. c) For CRN R3849.5, R3813.5, and R2762.5, the requested code case does not match the data reports.	Review CNSC's comment and consult with OEM.	WOOPEY.J 2020/08/06 12:59 : The vendor is revising the Manufacturer's Data Report, and OPG.DTL is revising the CNSC letter accordingly to correct the condition. The letter was in process of revision/approval when the issues were identified. Recommend C4-level, as the corrective action is captured in the Code Case approval process. Vendor's CAP (ENL) is being tracked through Protocol PPD-20-30317. SCR CAP to include an action for Lessons Learned rollout to DNR Engineering.
N-2020-04843	Further to the third party report on the HWMB West Annex seismic dike as actioned from SCR N-2019-21100, it was decided in 2019 by the Design Authority to pursue additional options to perform more in depth reviews of the HWMB seismic dike design with internal engineering resources. NK38-CORR-23000-0829481 has been prepared by Refurbishment Engineering to document the preliminary results from this first internal review.	Communicate NK38-CORR-23000-0829481 (preliminary results) to the Design Authority through arrangement by Licensing Support. Design Authority informed the CNSC on the preliminary results.	As per existing plan, the following actions are in progress: (1) Prepare engineering report based on these preliminary results. (2) Complete a separate, more detailed, analysis, using an independent different modelling software, prior to final turnover.
N-2019-15049	While attempting to pressure test prefabricated test segment 129423-01-01 it was identified that valve 0-38500-V571 was passing. Upon removal of the valve bonnet it was discovered to have foreign material inside the piping. Swarf and 6 packages of ear plugs were identified inside the system (see photo's attached). Vendor QC initiated NCR A00004-001-0487. The prefabricated test segment was then pressure tested successfully. Note: NCR has not been provided to OPG for prior approval, also Vendor generated ACE/RS Report ACE-19-16751	FE provided comments to Vendor QA/QC on draft of NCR. Email sent to Vendor and OPG-MDL regarding concern for testing piping prior to generating NCR. Notified site FME Coordinator of loss of control. Notified FLM and initiated SCR.	CLELANDA 2019/09/06 09:53 : While executing partial system pressure test for new D2O pipework, stakeholders were unable to maintain testing pressure. Isolation valve was disassembled revealing 6 pairs of earplugs still in their plastic packages within valve body. Additionally, metal swarf was also settled within valve cavity. (Photos attached). As part of contractor investigation to this FME Event additional valves have been exposed which also identified a bung in one and fin-strips in another. A compressible bung was pulled through a section of pipework, coming out black in this burst clean system. Discussed with OPG Project Management and contractor QA for a risk assessment and comprehensive response. OPG Commissioning and Supply Chain management notified of condition and welcoming trends.
N-2018-09406	While performing quality surveillance on the following ITP A00004-M3-120422-W40001 for a witness of material inspection of 0-38110-NV1175 Field Engineering identified the design EC status on the ITP is not up to date to reflect the latest design changes applicable to this ITP as identified on the CWP Minor Revision Sheet N017. ITP currently references EC 120422 R001 and actual revision status of EC 120422 R003. Change control process to the ITP has not been maintained.	Initiated oversight report D-OR-31555-C-8-1129 and notified FLM.	CLELANDA 2018/04/24 11:28 : As part of on-going surveillance of contractor-partner ITP during material inspections, Field Engineering identified discrepancy with master field copy revision and latest approved revision. Field Engineering have referenced Oversight Report generated including discussions between F.E. FLM and both QA organizations supervision specific to revision control expectations supporting field activities and effective ITP close out revisions leading to unencumbered documentation completion. QA partner agreed, ITP rejected as noted with vendor internal discussions in-progress regarding potential response. Tend as appropriate.
N-2018-01716	a vertical section of temporary PVC HVAC metal flanged ductwork running from the 100 el floor, up to the horizontal joint came apart and fell ~20' to the 100 elevation floor in a central walkway area of the building. No workers injured, closed work group way west of the area that the sections collapsed to.	workers who witnessed ductwork collapse communicated to their supervisor who in turn notified Aecon safety at which time OMO was notified. Area was immediately roped off at location and in vicinity of remaining suspended ductwork. Remaining suspended ductwork was secured with rope	fasten flanges with screws, tie off flex duct on each side of flange connections
N-2017-25610	Vendor QA reported finding foreign material in piping while performing an FME inspection during rework of spool piece installation in HWMB. There was an FME Level 1 plan that was associated with this work that was not adhered to. Foreign material was removed without a retrieval plan or notification to FME coordinator / Field Engineering. (See contributing SCR) Spool piece was then tacked in place however a tack was suspect and spool piece was cut out. Field Engineering has now performed the As-left FME inspection prior to re-welding of spool piece.	Informed FLM and had follow-up communications with Vendor QA Lead. Oversight report D-OR-31555-C-8-[illegible] was generated during As-Left inspection. Initiated SCR.	CLELANDA 2017/11/17 15:36 : Human performance event including follow-up discussion with EPC stakeholders highlighting less than acceptable behaviors and adherence to OPG governance protecting station systems. Recommend C-3 with request for CAR from EPC contractor. CLELANDA 2017/11/25 16:21 : Additional information: - Recommend C-3 NFE with request from contractor for CAR to prevent similar condition from occurring. Opportunity to re-enforce OPG expectations for foreign material prevention, protecting station systems including stakeholder notification satisfying QA program requirements.
N-2017-08623	- NK38-VCG-38000-10000-1000 (Catid 706404) was created previously for 0-38110-V941 (EC 120462). - Supplier submitted valve drawing (NK38-DRAW-38110-10050 R000) to the previous design service provider in June 2015. This drawing was accepted. - Due to changes in the project, the valve was delivered to OPG. Note that the valve came with a certificate of conformance [illegible]. - The valve was subsequently issued to the new EPC contractor for the installation of EC 120462. The new contractor has a tank in hop a spare using the existing spec sheet. - Valve 0-38110-V941 was installed by the new EPC contractor and EC 120462 was declared in service in December 2016. - Recently, the new EPC contractor received a deviation request from the supplier for the spare purchase. The supplier is seeking approval to omit the specified seal welded valve body to bonnet joint with gasket joint. The supplier also identified that they believe the valve they sold previously on 2015 also didn't meet the spec. - The system fluid in 0-38110-V941 is D2O. Design pressure is 2000kPa(g) and design temperature is 95C. The reason for a seal welded body to bonnet is to minimize potential leakage.	- New EPC contractor sought acceptance from OPG for deviation. - Refurb Design reviewed similar valves in the project to determine the extent of conditions (seal welded joints). Drawing records show that other similar valves in the project have seal welds. Unlike Catid 706404, these valves were reviewed directly by Refurb Design due to the project changing EPC contractor at the time.	- The deviation request (DDER 368004-01 attached to SCR) to be declined. - Obtain a spare valve with a seal welded body to bonnet joint as per the spec sheet. - Use the current 0-38110-V941 as is but increase surveillance for leaks when the line is used. The valve was tested by the supplier and also as part of the modification process so there are no evidence of leakage with the valve. Based on design configuration, the body-to-bonnet joint will be exposed to system fluid in the existing HWMB side of the line. - Schedule to replace the valve.
N-2017-08135	A walkdown of the pipe chase after backfilling identified that there is a leak near the joints (at building interface, south east corner) of the pipe chase. BANICAC 2017/03/14 08:12 : This refers to Pipe Chase EC 123130 in the new HWMB West Annex (not declared Available For Service).	Notify waterproofing sub-contractor, Responsible Engineer, Issue NCR and SCR.	Further engineering review required in consultation with the Project to gain concurrence on a permanent leak tight repair strategy. SCR should be categorized as a C3-NFE with action to investigate set up an Issue Resolution Team made up of JV, Construction, Field Engineering and Design as well as OPG Project and Design Oversight representatives. The team will be led by the JV Operations Manager. BANICAC 2017/03/14 08:12 : The EPC vendor was asked to correct the deficiency (the pipe chase is still under contractor control). I recommend C3-NFE classification with a follow-up action for OPG to confirm repairs are completed at the right level of quality.
N-2017-05069	Numerous manual diaphragm valves for the various HWMB West Annex D2O sub-systems require adjustment of the travel stop. A condition assessment of random newly installed valves showed that approximately 25% of the valves require adjustment of the travel rod. In some cases, the travel stop prevents the valve from fully closing because the stop bottoms out before resistance is felt on the diaphragm. In other cases the valve closes properly but the stop doesn't prevent the operator from exerting excessive force on the diaphragm. BANICAC 2017/03/01 23:16 : Note: there are no observable consequences at this time. The West Annex is still under construction.	Contacted Joint Venture and JV-OPG team was formed to investigate the condition of several newly installed valves in the field. The team concluded that approximately 25% of the installed valves require adjustment of the travel stop. A further condition check was performed on diaphragm valves that will be installed in the near future. Eight valves were unpackaged and inspected to reveal that three of these valves require adjustment of the travel stop.	BANICAC 2017/03/01 23:16 : The apparent cause is lack of a systematic process to confirm that travel stop is confirmed or set per manufacturer specification. I recommend C3-NFE classification with at least one action to set travel stops of all installed valves.
N-2017-01705	Email was sent to Field Engineer on January 5th, requesting a Concrete Drilling and Anchor Card (CDAC) for handrail installation. Drawing and Anchors were reviewed and it was discovered that the information was preliminary only. Specified anchor and embedment depth did not match the specifications and drawing was not stamped by an Engineer. There was not sufficient information to process a CDAC and that was returned back the contractor on January 5th. During a walk down on January 13th it was discovered that section of handrail had been installed and anchored.	Spoke with contractor and sent a email conducting work to stop and requested relevant information to properly process a CDAC. Informed supervisor, filed SCR.	DESOUZAC 2017/01/23 07:58 : Installation details changed to match what was installed. Coaching accepted. Roll out to entire crew performed to reinforce drill card requirements. Human Performance Lessons Learned presented by contractor (attached).
N-2016-30602	At 3:20 this afternoon Aecon fire workers were welding on the 107 elevation of the D2O Project, sparks from the welding fell to the 100 elevation below and ignited some material piled on some canvas duct work.	The fire was extinguished by Aecon Safety. ERT was called out to investigate and the area was quarantined and the watch for fire was set up and will be monitored throughout the night shift.	LUKTONS 2016/12/12 14:44 : The following actions to mitigate reoccurrence of a fire event were completed: • All combustibles removed from job site where possible. Where removal of combustibles was not possible, appropriate protection (i.e. fire rated plywood/fire blankets) was provided • Additional fire watch has been put in place • Ignition Source Permit (ISP) has been revised to include additional elevations (100el, 107el, 115el) • SWP updated to include measures being taken to eliminate/control combustibles for the work on multiple elevations. • As a result of a walkdown with Conventional Safety, CMO, SERM and Contractor Superintendent on Sunday Dec. 11th, additional controls for sparks "at ignition source" (i.e. additional fire blankets and screens along railings) have been put in place. SWP and PJB revised to include these details. • Contractor, CMO, Conventional Safety & SERM met with Shift Manager. Revised documents (Safe Work Plan and Ignition Source Permit) were presented. The implementation of the additional controls and path forward were discussed. Shift Manager released the incident scene. • SERM has accepted the Ignition Source Permit and will allow Contractor to sign on when they are ready to perform hot work. • All Contractor work groups received an updated PJB and roll out of the revised SWP. In addition the following post actions, as recommended by OPG Conventional Safety were completed: • All electrical cables which sustained damage physically removed from service and tagged • Remove all fire damaged debris/materials • Test and confirm GFCI circuits involved in event are confirmed to be operational prior to putting them back into service • Complete a thorough walkdown of surrounding area/equipment ensuring no other fire damage was sustained • Confirm spent fire extinguishers used in D2O fire suppression occurrence, have been removed from service • Check and ensure all extinguishers at the D2O site are available for use

SCR #	Initiator	Other Person Involved	Initiator Org	FLM	Initiating Mgr	Cat	Fire	Safety	Reportable	Affects Oper	Re Work	PM	Different Reportability	TOE Reqd	TOE Status	Diff Oper Than Initial
D-2014-17724	TOTFOC, RAYMOND ANTHONY		N-PMNRDM	LUKTON, SUSAN	Kennedy, Patrick	C2	N	N	N	N	N	Coletta, Anthony				
D-2014-04964	Qu, Nicole		D-DMCTRFW14	Wong, Thomas	Hamilton, Kenneth	C4-NFE	N	N	N	N	N	Hamilton, Kenneth				
D-2013-24454	Routledge, Duncan		D-DMCTRFW14	Zavorics, Paul	Hamilton, Kenneth	C4-NFE	N	N	N	N	N	Hamilton, Kenneth				
D-2013-21747	*****	*****	D-DMCTRFW14	Colson, Laurier	Hamilton, Kenneth	C3-NFE	N	N	N	N	N	Hamilton, Kenneth				
D-2013-19100	FORBECK, PERRY		D-DMCTRFW14	Wong, Thomas	Hamilton, Kenneth	B2	N	N	N	N	N	Hamilton, Kenneth				
D-2013-18196	DUTTA RAY, ANINDA		N-NRPDD	Kar, Arun	BEAUDETTE, BLAKE	C3-NFE	N	N	N	N	N	BEAUDETTE, BLAKE	PASZKOWJ 2013/10/23 11:00 - The event is not reportable as either option to resolve the issue will follow the appropriate approval process.			
D-2012-08890	Mario Caruso		N-PMDPDM	Makdessi, George	Makdessi, George	C3	N	N	N	N	N	Makdessi, George				
N-2020-10258	Lu, Henry		N-NRDDM	Pavic, Peter	Swogdon, Vishan	C3-NFE	N	N	N	N	N	Swogdon, Vishan				
N-2020-04843	Lu, Henry		N-NRRFPDM	Majanovic, Diego	Majanovic, Diego	C3-NFE	N	N	N	N	N	Majanovic, Diego		N		
N-2019-15049	*****	*****	N-PMFEM	Ostrand, Allan	Bowes, Wayne	C3-NFE	N	N	N	N	N	Grandsuro, Vincent				
N-2018-09406	Bucknell, Jason		N-PMFEM	Ostrand, Allan	Bowes, Wayne	C3-NFE	N	N	N	N	N	Bowes, Wayne				
N-2018-01716	Ross, Jeremy	Aecon Industrial	N-PMFEM	DUNCAN, ERIC	Alexander, Stefan	C3-NFE	N	N	N	N	N	Alexander, Stefan		N	Open	
N-2017-25610	Glover, Sean		N-PMFEM	Ostrand, Allan	Bowes, Wayne	C3-NFE	N	N	N	N	N	Bowes, Wayne				
N-2017-08623	Lu, Henry		N-NRDPDM	Zaidi, Raza	Zaidi, Raza	C3-NFE	N	N	N	N	N	Zaidi, Raza				
N-2017-08135	COSTACHE, Carmen		N-PMNRPM	Banicu, Constantin	Coletta, Anthony	C3-NFE	N	N	N	N	N	Coletta, Anthony				
N-2017-05069	Renaud, Paul		N-PMNRPM	Banicu, Constantin	Coletta, Anthony	C3-NFE	N	N	N	N	N	Coletta, Anthony				
N-2017-01705	Mahoney, Mike		N-PMFEM	Delaur, Chris	Ostrand, Allan	C3-NFE	N	N	N	N	N	Ostrand, Allan				
N-2016-30602	HRBAN, DEAN WILLIAM		N-PMNRPM	Mercer, John	Coletta, Anthony	C3-NFE	Y	Y	N	N	N	Coletta, Anthony				

SCR #	Diff Res Than Initial	Diff Sig Than Initial
D-2014-17724	LONGMIRD 2014/06/04 13:16 - Apparent Cause Evaluation required. High Level ACE	LONGMIRD 2014/06/11 12:06 - High MRPH
D-2014-04964	KENNEDYR 2014/02/13 08:32 - NFE - cause documented. Actions required to address the cause. Apparent Cause is: CF-R - TCR DA0023930 is in system to make changes on flow sheet when drawing issued - TCR DA0023930 is in system to note on flow sheet	
D-2013-24454	KENNEDYR 2013/12/20 08:31 - NFE - cause documented. Actions required to address the cause. Apparent Cause is: CF-G5	
D-2013-21747	KENNEDYR 2013/11/21 07:27 - NFE - cause documented. Actions required to address the cause. Apparent Cause is: CF-L1 - Confirmation from TRF acting Manager that J. Read has accepted. KENNEDYR 2013/11/21 13:09 - Correction: Aran Kar has confirmed acceptance via email (Refurb Design).	
D-2013-19100	KENNEDYR 2013/10/30 10:57 - Evaluator Root Cause required. To Jolcan Read, Darlington Design Projects	
D-2013-18196	MATHEWA 2013/10/30 08:20 - Cause known: Design change process did not ensure that changes were appropriately vetted, and did not follow the required approval process.	MATHEWA 2013/10/30 08:20 - Not significant by itself but has potential
D-2012-08890	Apparent Cause Evaluation required	
N-2020-10258	ZHAOJU 2020/08/06 13:56 : SCR initiated to document minor issues related to NK38-CORR-00531-21783 were identified after reviewing the questions from CNSC. NK38-CORR-00531-21783 was submitted to the CNSC as per SCR N-2020-09536. The vendor is revising the Manufacturer's Data Report, and OPG.DTL is revising the CNSC letter accordingly to correct the condition. C4 for trending. The corrective action is captured in the Code Case approval process. SIVEKUMD 2020/08/20 07:45 : As per MRM on August 13th, 2020 SCR being back action to review disposition. SCR to be re-categorized as a C3-NFE for N-NRDDM. Vendor CAP being tracked through Protocol PPD-20-30317. SCR CAP to include action for Lessons Learned rollout to DNR Engineering. Apparent cause is that latent errors and inconsistencies in the Manufacturer Data Reports led to less than adequate document reviews for CNSC submissions due to a lack of communications between the manufacturer, EPC vendor, and OPG design team.	
N-2020-04843	MENASHP 2020/04/06 11:06 : SCR initiated to document completion of (i) in-depth reviews of the HWMB seismic dike design and (ii) preparation of preliminary results document NK38-CORR-23000-0829481. Design Authority through arrangement by Licensing Support, informed the CNSC on the preliminary results. Actions to complete the detailed design analysis and engineering report are currently in progress. The apparent cause for this condition is transfer of design accountability from one design agency to another design agency. Refer to previous SCR N-2019-21100.	
N-2019-15049	STENHOUA 2019/09/16 15:43 : NFE - cause documented. Actions required to address the cause. Apparent Cause is: CF-N3, Construction Deficiencies - Foreign Material Intrusion identified during Hydrostatic Testing on prefabricated NC3 piping system. During pressure test execution of piping test segment it was identified that isolation valve was passing. Disassembly of valve bonnet revealed piping and valve cavity contained foreign material: swarf (metal filings) and 6 pairs of ear plugs. Initial extent of condition identified additional FME breaches requiring corrective action. Reference Vendor QC NCR A00004-001-0487 and ACE/RS Report ACE-19-16751	
N-2018-09406	STENHOUA 2018/04/26 14:12 : Trending SCR to document change control process not followed. Discovered during Quality Surveillance oversight. Deficiency reported as part of Quality Surveillance, reference D-OR-31555-C-8-1129. As per RA-22 1.1.3, corrective action for the adverse condition is incumbent on the vendor. Prior to peer coaching conducted regarding ITP deficiency, with Field Eng. citing less than adequate revision control. SCR recommended actions indicate ITP was rejected, however, this was found not to be the case as rejection was documented in error. Material verification activities are considered in process inspections and deemed acceptable by Field Eng. Vendor internal discussion are on-going with no change control revision to date. 218110 2018/05/09 08:58 : As per MRM 09May18, Apparent Cause: Lack of clarity around vendor program requirements.	
N-2018-01716	BLAJS 2018/01/30 09:45 : a vertical section of temporary PVC HVAC metal flanged ductwork came apart and fell ~20 ft to the 100 elevation floor in a central walkway area of the building. No workers injured. Shift Manager notified of potential HMRPH. Area of other similar ductwork roped off at ground elevation. The ductwork at height has been lashed with rope in addition to the temporary although hanger supports (2) that are / where in place. Subcontractor has agreed to look at all similar duct / flange connections with ring clamp connections. Add additional hangers as required & screw the flanged / ring clamp connects. BLAJS 2018/01/30 10:51 : As per Email's attached the event was categorized as a Medium MRPH. As per PRMMOD MRM 13FEB18 Recategorized from D3 to C3 NFE. Apparent Cause is inadequate temporary support - only one side of a suspended mechanical clamped connection of two flanged flexible ventilation duct sections was temporarily supported after being reinstalled to avoid interference with a scaffold build. Flow and vibration caused the unsupported duct flange to pull out of the clamp and the duct fell to the ground.	
N-2017-25610	HARDAN 2017/12/01 10:17 : No response from OPG-PM or Aecon QC to corrective action request, as such Apparent Cause Evaluation required. EOM to be OPG PM. HARDAN 2017/12/11 10:53 : This SCR is for an action to obtain a commitment from AECON to provide an evaluation within their own CAP program (CAR #). As such C3 NFE, Apparent Cause is CF-L5. Corrective Action: EO = PMDPD - Grant Howard	
N-2017-08623	DZIKOTK 2017/04/11 16:38 : No adverse condition in field. SCR raised to document condition. System Engineer monitoring issue. No further action required via SCR process. LOWRYA 2017/04/24 : Causal factor: Material Resource Management: means not provided for ensuring adequate availability of appropriate materials or tools.	
N-2017-08135	AHMADM 2017/03/20 08:31 : NFE - cause documented. Actions required to address the cause. Apparent Cause is: "A flaw in the design or construction of the seal at the interface between West Annex and the pipe chase."	
N-2017-05069	AHMADM 2017/03/09 08:32 : NFE - cause documented. Actions required to address the cause. Apparent Cause is: Travel rod prevents the newly installed manual diaphragm valves from fully closing.	
N-2017-01705	HARDAN 2017/01/27 08:32 : C3 NFE to be consolidated with D-2016-29805. Apparent Cause is CF-B Written Communication. The written presentation or exchange of information. the work group believed that the drill card was in place within the work package. this event is being evaluated under vendor cap process CAR 2017-0023 with evaluation details and corrective actions to be reviewed and accepted by opg management.	
N-2016-30602	AHMADM 2017/01/11 13:44 : NFE - cause documented. Actions required to address the cause. Apparent Cause is: Lack of attention to details. EO manager's acceptance email is attached.	

SCR #	EO Mgr	Evaluators	Eval Org	TrendingOrgs	CA Plan Due Dt	CA Plan Completion Dt	CAP Due Dt	EO Eff Rvw	Coordinator	Coordinator Comments	Vend Rel	Vend CAP/NCR	Vendors	Ext WANO	Ext COG	Ext NA	Int FW	Int NA	Days At MRM	SCR Reviewed	MRM Review Dt	MRM Comments	Line Management Codes	StationReworkERA	EquipmentFailure	ER Program	Failed Eqpt Type
D-2014-17724	Coletta, Anthony	Heather Pritchett [redacted]	N-PMNRPM	N-PMNRDM, N-PMNRPM	7/16/2014	6/26/2014	2014/08/29	Y			Service		BLACKMCDONAL	Y	Y	N	N	Y	7		6/11/2014	Presentation to CARB Required.	OAD-IO2				
D-2014-04964	Hamilton, Kenneth	Rick Kennedy [redacted]	D-DMCTRFW14	D-DMCTRFW14	2/28/2014	2/18/2014	2014/02/28	N	Kennedy, Rick		N			N	N	N	N	Y	0		2/13/2014						
D-2013-24454	Hamilton, Kenneth	Rick Kennedy [redacted]	D-DMCTRFW14	D-DMCTRFW14	1/10/2014	1/6/2014	2014/01/10	N	Kennedy, Rick		N			N	N	N	N	Y	2		12/20/2013						
D-2013-21747	Lostiba, Rajeev	ANINDA DUTTA RAY [redacted]	N-NRWDED	D-DMCTRFW14, N-NRWDED	12/6/2013	12/6/2013	2013/12/06	N	Kennedy, Rick		Service		BONTECH, BLACKMCDONAL	N	N	Y	N	Y	0		11/21/2013						
D-2013-19100	Ciccolo, Luca	MARTIN SPELT [redacted]	N-PMPCOM	D-DMCTRFW14, N-PMPCOM	1/22/2014	1/22/2014	2014/01/22	Y	Kennedy, Rick		Service		BLACKMCDONAL	Y	Y	N	N	Y	0		11/27/2013	SVAROUSL 2013/10/31 11:00 - Repeat event search conducted for CAD - not a potential repeat event. 3/3/2003 2013/10/31 11:00 - CARB Presentation Required. METEDES 2013/11/27 14:20 - CO Manager changed with concurrence of both Managers, disposition date revised to reflect change of ownership.					
D-2013-18196	Kar, Arun	ANINDA DUTTA RAY [redacted] Arun Kar [redacted]	N-NRWDEM	N-NRPDD, N-NRWDEM	11/14/2013	11/14/2013	2013/11/14	N			Service		BONTECHNOLOGY	N	N	Y	N	Y	0		10/30/2013		CON-TWK-NR1				
D-2012-08890	BABB, SH SOLANKI	Jeff Mills, John Rajan	N-PMDPDM	N-PMDPDM - Nuclear Design Projects Darlington Manager; N-PMNRDM - BLACK AND MCDONALD - DARLINGTON MANAGER	10/4/2012	10/4/2012	10/4/2012	N	Mills, Jeff		Service		BLACKMCDONAL	N	N	Y	N	N			9/11/2012		CON-PI-HF - Contractor human performance issue CON-PI-SCHE - Contractor schedule issue				
N-2020-10258	Majanovic, Diego	Henry Lu [redacted]	N-NRDDM	N-NRDDM, N-NRDDM	8/3/2020	8/3/2020	2020/08/03	N	Zhao, Justin		N	PPD-20-30317	ELLIOHAYTS	N	N	Y	N	Y	6		8/20/2020		QM-DOC-CARB REVIEW				
N-2020-04843	Majanovic, Diego	Henry Lu [redacted]	N-NRRFPDM	N-NRRFPDM	5/4/2020	4/30/2020	2020/05/04	N	Menashi, Prabhakar		N			N	N	Y	N	Y	6		4/6/2020		ENG-CRI-RNG-WEBK,ENG-CRI-RNG - PA-Q4				
N-2019-15049	Grandsuro, Vincent	Peter Moore [redacted]	N-PMNRPM	N-PMFEM, N-PMNRPM	9/24/2019	9/24/2019	2019/09/24	N	Stenhouse, Andrew		Both	NCR A00004-001-049	CANATOMKA	N	N	Y	N	Y	4		9/10/2019		CON-PI-EXE,CON-PI-HP,PROC-NC-QB-FME 1, QB-PROC 1				
N-2018-09406	Bowes, Wayne	Andrew Stenhouse [redacted]	N-PMFEM	N-PMFEM	5/23/2018	5/22/2018	2018/05/23	N	Stenhouse, Andrew		Both		CANATOM	N	N	Y	N	Y	8		5/8/2018		CON-PI-PM,QB-PROC 1				
N-2018-01716	Coletta, Anthony	Joe Walsh [redacted]	N-PMNRPM	N-PMNRDM, N-PMNRPM	2/28/2018	2/16/2018	2018/02/28	N	Bennett, Sonia		Material		AECONINDUSTR	N	N	Y	N	Y	0	Y	2/13/2018		DMD-IO2,DMD-FO01				
N-2017-25610	Howard, Grant	Andrew Ward [redacted]	N-PMDPD	N-PMFEM, N-PMDPD	1/9/2018	12/21/2017	2018/01/09	N	Ward, Andrew		Service		AECONINDUSTR	N	N	Y	N	Y	4		12/11/2017	Cycled back to MRM status per Screening	CON-PI-HP,QB-FME 1				
N-2017-08623	Zaidi, Raza		N-NRDPDM	N-NRDPDM				N	Eckel, Robert		Material		ENERTECH	N	N	Y	N	N	7		4/11/2017	LOWRYA 2017/04/21 Per MRM Chair upgraded to C3 NFE with acceptance by receiving organization.	Procurement,CON-Eng Quality				
N-2017-08135	Coletta, Anthony	Manzoor Ahmad [redacted]	N-PMNRPM	N-PMNRPM	4/17/2017	4/10/2017	2017/04/17	N	Ahmad, Manzoor		Service		SLNAECONJV	N	N	Y	N	Y	8		3/20/2017		CON-PI-EXE				
N-2017-05069	Coletta, Anthony	Manzoor Ahmad [redacted]	N-PMNRPM	N-PMNRPM	4/6/2017	3/31/2017	2017/04/06	N	Ahmad, Manzoor		Material		SLNAECONJV	N	N	Y	N	Y	8		3/9/2017		CON-PI-ENG,CON-PI-MAT				
N-2017-01705	Ostrand, Allan	Andrew Ward [redacted]	N-PMFEM	N-PMFEM, N-PMDPD	2/24/2017	2/14/2017	2017/02/24	N	Ward, Andrew		Both		AECONINDUSTR	N	N	Y	N	Y	4		1/27/2017		CON-PI-HP,CON-NUCSAF,CON-PI-PM				
N-2016-30602	Coletta, Anthony	Manzoor Ahmad [redacted]	N-PMNRPM	N-PMNRPM	2/8/2017	2/1/2017	2017/02/08	N	Ahmad, Manzoor		Service		SLNAECONJV	Y	Y	N	N	Y	12		1/11/2017		CON-PI-FUN,CON-PI-SAFE,POI				

SCR #	Discussion of Facts	Conclusions
D-2014-17724	This evaluation report is considered Confidential per OPG-STD-0030. Please contact Anthony Coletta (Evaluating Organization Manager) for further information.	This evaluation report is considered Confidential per OPG-STD-0030. Please contact Anthony Coletta (Evaluating Organization Manager) for further information.
D-2014-04964	When NK38-DRAW-75550-10001 is issued or Pass/Fail/Accel Suite (accepted by OPG) following EC 122210 (Argon Tank Relocate) AFS, the SRE will provide a flowsheet markup to TRF Ops Support for processing.	NFE - NA
D-2013-24454	High emissions were expected. The previous night shift unloaded TDO 2 and 4 to the rundown 500 system. This is a slow transfer, about 8 hours long, and requires the tanks to be vented throughout. During the transfer, the stack drains were received and peaked around 20 µCi/m³ HTO on R1000	NFE - NA
D-2013-21747	C3-NFE	CF-L1 - Intefaces among work groups are not clearly defined and do not support effective work perfomance
D-2013-19100	What happened: The original committed to milestone date of October 5, 2013 for the Low Pressure Service Water tie-ins was missed by the D2O Storage Project which resulted in a 2 month delay to the Tritium Removal Facility (TRF) Outage. How it happened: The D2O Project was delayed pending OPG Board approval to proceed with Darlington Refurbishment, implementation of the Extended Services Master Service Agreement (ESMSA), and implementation of Engineering Procure and Construct (EPC) modification process. As a result the project got off to a late start and this was not flagged as a risk. The other main risks associated with being: •The first project for the refurbishment organization •The first major project to use the EPC process •The first project to use the ESMSA process were to be mitigated by the EPC process. Adverse conditions arising from these risks had to be corrected as this "pilot" project progressed. The refurbishment interfaces with the Station Operations and Contractor processes were not clarified and effective. Contractor expertise was not initially aligned with OPG methods and standards for modification design requirements (MDR) and schedule preparation. As a result Contractor developed MDR, and project schedule were not aligned with OPG standards to facilitate risk identification and milestone threats. This was due to failure of involving the right expertise at the right time to get detailed MDR's and a quality project construction schedule. As result further delays in the project occurred. See Attached Incident Investigation Report for further details.	Direct Cause: LPSW line re-route tasks were not on the TRF outage schedule. Root Cause (1): Failure of OPG to engage all stakeholders to ensure tasks are READY - no risk, per station schedule milestone processes. Contributing Cause (1): Failure of OPG to mitigate risk prior to affecting external milestones. Contributing Cause (2): Modification Design Requirements not sufficiently detailed. Contributing Cause (3): Late issuance of Purchase Order (PO) - 18 months following approval memo. Contributing Cause (4): Competing for station support. See attached Incident Investigation Report
D-2013-18196	See Condition Description	Design not properly implemented in th field
D-2012-08890	OPG comments on contractor's (B&M) final schedule for project#16-31555 were submitted to B&M on 01-Aug-2012. [redacted]	Consequences of this adverse condition: OPG Design Projects had to assign extra resources to the project to determine the cause of the schedule delays and inconsistencies. B+M's contractor team use of multiple schedule databases, understaffed Management team at project inception caused our adverse condition. It should be noted that this is the first large EPC contract awarded to B+M. This is a new , untested process for OPG and it's contractors. Interim action: B+M were increasing staff levels and arranging a project meeting review schedule with OPG to meet project demands at the time of this evaluation. SCR's closed out to this one: There are no SCR's closed out to this one.
N-2020-10258	NA for NFE SCRs	Latent errors and inconsistencies in the Manufacturer Data Reports led to less than adequate document reviews for CNSC submissions due to a lack of communications between the manufacturer, EPC vendor, and OPG design team.
N-2020-04843	NA for NFE SCRs	SCR initiated to document preliminary results NK38-CORR-23000-0829481 for in-depth reviews of the HWMB seismic dike design. Actions to complete the detailed design analysis and engineering report are currently in progress. Apparent cause is transfer of design accountability from one design agency to another design agency. Also refer to previous SCR N-2019-21100.
N-2019-15049	N/A - C3 NFE	N/A - C3 NFE
N-2018-09406	Event Title: 16-31555, D2O Storage Facility: Product Quality Issue - Engineering Change Control process to the ITP has not been maintained. Detailed Discussions of the Facts: Problem Statement: On April 19, 2018 at approximately 14:00 hours Field Engineering identified the design EC revision status on ITP was not up to date. EC revision to reflect the latest design changes applicable to ITP. Detailed Discussion of Facts: While performing quality surveillance on the following ITP A00004-M3-120422-W40001 for a witness of material inspection of 0-38110-NV1175 Field Engineering identified the design EC status on the ITP is not up to date to reflect the latest design changes applicable to this ITP as identified on the CWP Minor Revision Sheet N017. ITP currently references EC 120422 R001 and actual revision status of EC 120422 R003. Change control process to the ITP has not been maintained. Risks/ Consequences: Potential consequence is risk of delays/rejections of ITP during close out, due to lack of revision control. Interim Actions Taken: F.Eng. FLM conveyed revision control expectations to Q/A organization supervision	Not required as per N-PROC-RA-0022
N-2018-01716	C3-NFE: Field not required	C3-NFE: Field not required
N-2017-25610	Problem Statement: On Nov 13, 2017 FME nearly missed being introduced into the HWMB D20 Upgrader system. Detailed Discussion of Facts: The SCR describes the condition as, on Nov 13, 2017 at DNGS a vendor QA inspector reported to F-Eng of finding foreign material in HWMB piping while performing an FME inspection during the rework of a spool piece installation. FME Level 1 plan associated with this work was not adhered to on the original valve install, valve tacked in after bypassing the FME OPG and vendor witness points. N-2017-26403 was initiated for the bypassed witness point. Spool piece was then tacked in place however a tack was suspect and spool piece was cut out. Foreign material was removed without a retrieval plan or notification to FME coordinator / Field Engineering. Field Engineering has now performed the As-left FME inspection prior to re-welding of spool piece. Addition information: •The various breaks in work for the D2O project has caused dis-continuity of supervisory oversight. •Photographs of the as found condition attached to the SCR confirm the FME quantity was significant •The tie-in piping underwent an "in service" pressure test with the FME in the piping system. This exposed the D2O Upgrader system (SCI 38430) to the FME. It was only because of a "no flow" condition that the FME did not enter the D2O Upgrader system. •The "no flow" condition was attributed to check valve 0-38430-NV620, which a subsequent design change called for its removal. •Piping is of 1.5" diameter. As this project is being complete under the vendor's C of A, so shall this event be evaluated under the vendor's corrective action program. As such, this SCR will serve as tracking for OPG actions. Risks/ Consequences: Risk of activated and corrosion causing particles in the D2O Upgrader system. Interim Actions Taken: A vendor "Nuclear Corrective/Preventive Action Report", N2017-0268 was initiated Nov 16, 2017 and has a "Response Due Date" of Dec 16, 2017	Not required as per N-PROC-RA-0022
N-2017-08623		
N-2017-08135	NA for NFE SCRs	Problem Statement: Leak discovered near the joints (at building interface, south east corner) of the pipe chase. This was discovered during a walkdown after backfilling on March 13, 2017. This work is a part of Project 16-31555 (D2O Building & Annex) and EC # 123130 (0-23840-BURIED PIPE CHASE BETWEEN HWMB / TRF AND WEST ANNEX). This EC is still under construction and is not AFS'ed yet. Immediate Actions Taken: Waterproofing contractor was informed. NCR was initiated. Apparent cause: Flaw in the design or construction of the seal at the interface between West Annex and the pipe chase. Corrective Actions: Engineering review is required in consultation with Project team to determine a permanent leak tight repair strategy. An Issue Resolution Team is to be setup led by the main contractor (SLNAECONJV) and includes Field Engineering, Design and Project representatives. The Team is to determine the repair strategy, the contractor is to implement it in the field and OPG oversight is to confirm repairs are completed and is acceptable. This action is in progress.
N-2017-05069	NA for NFE SCRs	Problem Statement: Several manual diaphragm valves newly installed in the Heavy Water Management Building (HWMB) West Annex D2O sub-systems, were found to have issues with fully closing. The travel stop prevents the valves from fully closing because the stop bottoms out before resistance is felt on the diaphragm. In some cases the valve closes properly but the stop doesn't prevent the operator from exerting excessive force on the diaphragm. Immediate Actions Taken: A joint OPG and vendor team investigated the condition of several newly installed valves. It was determined that approximately 25% of the valves require adjustment of travel stop. A further check on valves to be installed in future revealed that some of them also require travel stop adjustment (3 out of 8). Apparent Cause: No systematic process was in place to check the travel stop (and make necessary adjustments, if required) prior to installation. Risks: No adverse consequences at this time as West annex is still under construction. Corrective Actions: Check all the manual diaphragm valves installed or to be installed in HWMB West Annex to ensure that the travel stop is at the correct position and make necessary adjustments to the travel stop, if required. Reference Assignment #1.
N-2017-01705	This event is being evaluated under vendor cap process CAR 2017-0023 with evaluation details and corrective actions to be reviewed and accepted by OPG management. This is a repeat event of D-2016-29805 (Nov 5, 2016. 2 months earlier by a different vendor) AR due Apr 28, 2017.	Not required as per N-PROC-RA-0022
N-2016-30602	NA for NFE SCRs	Problem Statement: Welding activities for D2O Storage Facility Project (16-31555) were in progress on 10 Dec 2016. Welding was being done by the contractor (SNL AECON Joint Venture) at Elevation 107. Sparks from the welding fell to Elevation 100 and ignited some material piled there. There was no personnel injury. Damages to property was not significant (2 Extension cords and 2 welding cables were burnt. One section of portable canvas duct work for a portable heater was damaged). Immediate Actions taken: Fire was extinguished, ERT was called, the area was quarantined and fire watch was set up. Apparent Cause: Lack of attention to details. - Inadequate monitoring of falling sparks from welding - Fire blanket or fire resistant guards were not used to protect combustibles - Adequate Ignition Source Permit (ISP) not in effect (Reference SCR N-2016-30938) - Inadequate housekeeping. Combustible material was on the site which could have been removed Post incident actions: The following actions were completed by the contractor to mitigate recurrences of a similar event: - All combustibles removed from job site where possible or appropriate protection (i.e. fire rated plywood/fire blankets) was provided - Additional fire watch has been put in place - Ignition Source Permit (ISP) has been revised to include additional elevations (100el, 107el, 115el) - SWP updated to include measures being taken to eliminate/control combustibles for the work on multiple elevations. - Additional walk down was conducted with Conventional Safety, CMO, SERM and Contractor Superintendent on Sunday Dec. 11th. As a result of this walk down, additional controls for sparks "at ignition source" (i.e. additional fire blankets and screens along railings) have been put in place. SWP and PJB revised to include these details. - Contractor, CMO, Conventional Safety & SERM met with Shift Manager. Revised documents (Safe Work Plan and Ignition Source Permit) were presented. The implementation of the additional controls and path forward were discussed. Shift Manager released the incident scene. - SERM has accepted the Ignition Source Permit (ISP) and will allow Contractor to sign on when they are ready to perform hot work. - All Contractor work groups received an updated PJB and roll out of the revised SWP. In addition the following actions, as recommended by OPG Conventional Safety, were completed by the contractor: - All electrical cables which sustained damage, were removed from service and tagged - Removed all fire damaged debris/materials - GFCI circuits involved in event were tested and are confirmed to be operational prior to putting them back into service - A thorough walk down of surrounding area/equipment was completed to ensure no other fire damage was sustained - Confirmed that the spent fire extinguishers used in D2O fire suppression occurrence, have been removed from service

SCR #	Previous Similar Condition	Analysis Methodology	Action Reqd	Addl Action Reqd	ACE	Coordinator Disposition	Discussion With Initiator	Event #	Initiator Req	% Power	HasAttachments
D-2014-17724	This evaluation report is considered Confidential per OPG-STD-0030. Please contact Anthony Coletta (Evaluating Organization Manager) for further information.	This evaluation report is considered Confidential per OPG-STD-0030. Please contact Anthony Coletta (Evaluating Organization Manager) for further information.	28176252							NA	Y
D-2014-04964	NFE - NA	AC = CF-R	28164768								N
D-2013-24454	NFE - NA	AC = CF-G5	28163279								N
D-2013-21747	None	C3-NFE	28162575				Initiator contacted for input		Y		N
D-2013-19100	Extent of Condition, applicable to all projects, including refurbishment which have an impact on milestones external to the project. Evaluation Organization Manager briefed the affected Project Managers on the results of this investigation to assist in recognizing and correcting similar issues. See attached Incident Investigation Report	See Attached Incident Investigation Report	28163841				Initiator contacted for input		Y	NA	Y
D-2013-18196	No Further Evaluation (NFE) performed	No Further Evaluation (NFE)	28161957				Initiator contacted for input		Y	NA	Y
D-2012-08890	Searched all 3 OPG data bases and COG website for OPEX using "lack of contractor schedule" and dates 05OCT10 to 05OCT12. No relevant SCRs were found with corrective actions that could have assisted in correcting our adverse condition.	Barrier Analysis was used for this evaluation. N-FORM-10136 attached. Primary failed barrier*Causal Factor CF-4 Communications The programs and processes associated with corporate, divisional, and departmental communications were not effective in ensuring all critical information was transmitted and/or understood by the intended target audience. -Content of communication was incomplete, ambiguous -Communication strategy was incomplete or ineffective - The message was not clear and concise Secondary failed barrier*CF-G2 Personnel Assignment and Coordination Departmental resource planning processes did not ensure that personnel with the required qualifications were available to perform the tasks as scheduled. Work was not coordinated with the required resources from supporting work groups. The Apparent Cause(s) are: B+M's contractor team is comprised of 3 companies. Each companies portion of the schedule was contained in a separate database. Amalgamating the schedules into one useable vehicle was cumbersome and time consuming. The B+M Management team was understaffed at the inception of the project. Human performance trend codes: FD-PARU Reference Use procedure not used in accordance with established requirements. FD-SMO Supervisor Oversight of Task and Schedule Adherence	28161904								Y
N-2020-10258	NA for NFE SCRs	NA for NFE SCRs	28236161				Not Applicable for No Further Evaluation Only				N
N-2020-04843	NA for NFE SCRs	NA for NFE SCRs	28233241				Not Applicable for No Further Evaluation Only				N
N-2019-15049	N/A - C3 NFE	N/A - C3 NFE	28226471				Initiator contacted for input		N	NA	Y
N-2018-09406	Not required as per N-PROC-RA-0022	Not required as per N-PROC-RA-0022	28212868				Initiator contacted for input		N	NA	Y
N-2018-01716	C3-NFE: Field not required	C3-NFE: Field not required									Y
N-2017-25610	Not required as per N-PROC-RA-0022	Not required as per N-PROC-RA-0022	28209823				Initiator contacted for input			NA	Y
N-2017-08623											Y
N-2017-08135	NA for NFE SCRs	NA for NFE SCRs	28200651				Not Applicable for No Further Evaluation Only				N
N-2017-05069	NA for NFE SCRs	NA for NFE SCRs	28199686				Not Applicable for No Further Evaluation Only		Y	NA	N
N-2017-01705	Not required as per N-PROC-RA-0022	Not required as per N-PROC-RA-0022	28189985				Not Applicable for No Further Evaluation Only				Y
N-2016-30602	NA for NFE SCRs	NA for NFE SCRs					Not Applicable for No Further Evaluation Only				Y

SCR #	SCR Date	Status	SCR_Age	Title	Disc Date	Eq Fail	Event Date	Location	Unit	Initiator	Other Person Involved	Initiator Org	FLM	Initiating Mgr	Cat	Fire	Safety	Reportable	Affects Oper	Re Work	PIR	Deferred Reportability	TOE Reqd	TOE Status	Diff Oper Than Initial
N-2016-28727	2016/11/18	CLOSED	1563	DNGS 16-31555 HWMB an authorized removal of SATR area the Nuclear Class 3 DSTR Valve 6-38110-V1001	2016/11/04	N	2016/11/04	DNGS HWMB	PRNMOD	VANDERMEYS, JAMES	CS For DD	N-PRNRPM	DUNCAN, ERIC	Cotelia, Anthony	C3-NFE	N	N	N	N	N	Cotelia, Anthony				
N-2016-22027	2016/09/06	CLOSED	1669	D2O West Annex New Construction DNGS Job # 16-31555 - Worker Cut on Forehead	2016/09/05	N	2016/09/05	D2O West Annex New Construction Site	PRNMOD	LEWIS, DAVID		N-PRNRDM	Watts, Wayne	Mensar, John	C3	N	Y	N	N	N	Mensar, John				
N-2016-21436	2016/08/26	CLOSED	1677	16-31555 D2O West Annex Electrical Design Issues	2016/08/26	N	2016/08/26	HWMB West Annex	REFURB	HONG, RON		N-PRNRPM	Banica, Constantin	Cotelia, Anthony	C3-NFE	N	N	N	N	N	Cotelia, Anthony				
N-2016-20953	2016/08/20	CLOSED	1683	16-31555 D2O West Annex New Construction - Temporary 600V Power Supply Cable was PINCHED during excavation. Safety GFI Breaker "tripped"	2016/08/20	N	2016/08/20	Trench Excavation East of D2O New Construction P/C	PRNMOD	LOWES, JASON		N-PRNRPM	LUXTON, SUSAN	Cotelia, Anthony	C3-NFE	N	Y	Y	N	N	Cotelia, Anthony	LONGWIRD 2016/08/			
N-2016-12449	2016/05/10	CLOSED	1785	D2O Facility: Quality Assurance Trend SCR - Quality & Process Concerns (Proj. 16-31555)	2016/05/10	N	2016/05/10		PRNMOD	Ostand, Alan		N-PRPFEM	Kennedy, Patrick	Kennedy, Patrick	C3	N	N	N	N	N	Kennedy, Patrick				
N-2015-28616	2015/12/07	CLOSED	1940	D2O Project 16-31555: Trend SCR for Water Ingress	2015/12/01	N	2015/12/01	D2O - Perimeter Waterproofed Genesis Dike Walls	PRNMOD	Yao, Tony	Chin Dee	N-PRNRPM	DUNCAN, ERIC	Cotelia, Anthony	C3-NFE	N	N	N	N	N	Cotelia, Anthony				
N-2015-23043	2015/10/06	CLOSED	2006	0-16-31555 - Material Transfer Issues E/C execution are of severe risk for T1501 outage work as well as other future work schedule risk	2015/10/07	N	2015/10/07		PRNMOD	Sandhya, Alid		N-PRNRPM	Read, Julian	Cotelia, Anthony	C3-NFE	N	N	N	N	N	Cotelia, Anthony				
N-2015-18801	2015/08/20	CLOSED	2049	D20 - Project # Project 16-31555 small concrete vibrator head disconnected during concrete pour	2015/08/19	N	2015/08/19	D2O HWMB	PRNMOD	DOEBEL, KATHERINE		N-PRPFSOM	LUXTON, SUSAN	Kennedy, Patrick	C3-NFE	N	N	N	N	N	Kennedy, Patrick				
N-2015-04075	2014/12/22	CLOSED	2290	PROJ 16-31555 Grounding Separation Design Requirements for Main Power Supply (13.8 KV) to HWMB-WA from Substation 0-52800-055 are not available	2013/05/23	N	2013/05/23		PRNMOD	MACK, DAN		N-PRNRPM	Read, Julian	Cotelia, Anthony	C3-NFE	N	N	N	N	N	Cotelia, Anthony				
N-2014-30215	2014/12/12	CLOSED	2300	16-31555, Approved Radiation Source Term Design Requirements for HWMB-WA are not available from OPG Design	2014/04/14	N	2014/04/14	DNGS HWMB-WA	PRNMOD	MACK, DAN		N-PRNRPM	Read, Julian	Cotelia, Anthony	C3-NFE	N	N	N	N	N	Cotelia, Anthony				
N-2014-30652	2014/11/03	CLOSED	2339	16-31555 D2O HWMB individual exposed to falling hazard	2014/11/03	N	2014/11/03	D2O HWMB	PRNMOD	Mattachione, Deanna		N-PRPFDM	LUXTON, SUSAN	Kennedy, Patrick	C2	N	N	N	N	N	Kennedy, Patrick				
N-2014-21771	2014/07/23	CLOSED	2442	16-31555 - Schedule Delay to Low Item ENG/23610 - "OPG Accept CDS for DEC 120423"	2014/07/23	N	2014/07/18	Darlington Energy Complex	REFURB	DUTTA RAY, AMANDA		N-NRPESPM	Zardi, Razia	Zardi, Razia	C3-NFE	N	N	N	N	N	Zardi, Razia				
N-2014-07610	2014/03/03	CLOSED	2584	16-31555: Tractor Trailer in appropriately parked on Holt Road blocking traffic	2014/02/25	N	2014/02/25	Holt Road south bound lane south of Lagoons	PRNMOD	Read, Julian		N-PRDPDM	Cotelia, Anthony	Popovic, Dragan	C3-NFE	N	N	N	N	N	Popovic, Dragan				
N-2014-05430	2014/02/18	CLOSED	2597	16-31555: Unallowable costs being submitted by vendor	2014/02/18	N	2014/02/18		PRNMOD	Read, Julian		N-PRDPDM	Cotelia, Anthony	Cotelia, Anthony	C3-NFE	N	N	N	N	N	Cotelia, Anthony				
N-2014-04042	2014/02/06	CLOSED	2606	16-31555: DEOM GOV does not align to OLW requirements regarding use of Cable CatIDs when procured by EPC Vendors. Delays EC120488 & EC120489	2014/02/03	N	2013/05/23		PRNMOD	MACK, DAN		N-PRNRDM	Read, Julian	Cotelia, Anthony	C3-NFE	N	N	N	N	N	Cotelia, Anthony				
N-2014-04404	2014/02/07	CLOSED	2608	16-31555 - F1 - spill from ground heater	2014/02/06	N	2014/02/06	F1 site	PRNMOD	ROSSELL, KATHERINE		N-PRNRDM	LUXTON, SUSAN	Kennedy, Patrick	C3-NFE	N	N	N	N	N	Cotelia, Anthony				
N-2014-01348	2014/01/14	CLOSED	2632	16-31555 HWMB West Annex - C13 Laydown area water runoff	2014/01/14	N	2014/01/14	C13 area as per outage plan. East of powerhouse	PRNMOD	MCDONALD, KURT		N-PRNRDM	LUXTON, SUSAN	Kennedy, Patrick	C3	N	N	N	N	N	Cotelia, Anthony				
N-2013-22011	2013/11/20	CLOSED	2662	Resource allocation for resolving work protection issues in field for EPC Contracts (Project 16-31555)	2013/11/21	N	2013/11/21	HWMB/TRF	REFURB	Szyndrowski, Brian	Rajeev Leekha	N-NRDEM	Kai, Alan	Kai, Alan	C3	N	N	N	N	N	Kai, Alan				
N-2013-18165	2013/08/08	APPROVED	2772	Project 16-31555 - NUNB-29000-10000-R001	2013/07/31	N	2013/07/31		NUCPROJ	Burns, Josh		N-PRDPDM	Read, Julian	SOLANKI, RAMESH	C3-NFE	N	N	N	N	N	Popovic, Dragan				
N-2013-05569	2013/07/04	APPROVED	2773	Project 16-31555 Box Drain Hose not installed per work order task instructions	2013/07/04	N	2013/07/04		NUCPROJ	Rines, Thomas		N-PRNTPM	Read, Julian	SOLANKI, RAMESH	C3	N	N	N	N	N	SOLANKI, RAMESH				
N-2012-30467	2012/11/01	CLOSED	2778	Project 16-31555 - Proposed vapour recovery system not acceptable to operations/environment stakeholders	2012/10/31	N	2012/10/24		PRNMOD	Read, Julian		N-PRDPDM	Makdessi, George	Makdessi, George	C3	N	N	N	N	N	Makdessi, George				

SCR #	Condi Descr	Action Taken	Recommended Resolution
N-2016-28727	E3FL staff were notified on 4-Nov-2016 that valve 6-38110-V1001 was located in the HWMB on elevation 97.0 outside of a contained FB location. SCR N-2016-27821 was issued on 08-Nov-2016 to identify the resequencement of the valve. When E3FL went to retrieve the valve and return it to FB storage, it was discovered that the approved SATR (6-18-0003) with labeled FB storage for the valve was dismantled by others and scaffolding erected in its place.	This SCR has been initiated to clarify that control of the valve was maintained in an approved SATR when it was moved by others.	1. E3FL will investigate requirements to ensure QA controls are maintained for valve 6-38110-V1001. 2. Work groups responsible for the erection of the scaffolding in the HWMB need to be coached on the requirements around moving SATRs.
N-2016-22027	Worker injury - worker pulling steel U-bar piece (rod fence connector) upward; made contact with forehead causing small cut to forehead. Worker removing U-bar piece from ball fencing when it became stuck. Worker used additional force to pull up when U-bar became dislodged and struck worker in forehead above eye area (between safety glasses and hard hat).	EXT called. Line supervision notified, CMO notified, Shift Manager notified. Worker sent to hospital on EXT recommendation that stitches maybe required. Returned to work to regular duties. WELLONSN 2016/09/12 10:40 - EXT was called to assist in medical treatment of worker. EXT indicated that a couple of stitches would be required. Worker supervisor escorted worker to hospital for further assessment and treatment. Worker did not lose consciousness and was responsive during evaluation of EXT. OPG Contract Administrator notified of incident by contractors shift Superintendent. Injury information available at the time was forwarded to Shift Manager and other stakeholders (CMO Manager, Safety Field Services, OPG Projects, BTU JHSC rep) by Contractor Administrator. WELLONSN 2016/09/12 14:25 - Worker received 5 stitches and returned to normal duties same shift.	Workers have been coached to the use of tapping the U-bar twice if they become stuck to prevent reoccurrence. **2016/09/13: update from Carl RP - DN RPD Discovery Health Physical completed follow-up on the individuals this and Whole Body Count(WBC). The review confirmed there was no dose consequence to the worker as a result of this event**
N-2016-21436	The electrical distribution system for the HWMB West Annex consists of the following Design EC's. The designs are being finalized and CORE meetings were held in August 2016. 120472: 13.8kV, 600V switchgear and 125 Vdc control power distribution; 120474: Back Up Diesel Generator power; 120478: 600V MCCs; 120475: 600V UPS & 120 V control power distribution; 120656: 120V control power distribution. This distribution system is independent of station power (no ties to Class 4,3,2,1). The normal supply is from Nuclear East Facilities power system (via EW13). In the event of a power failure on the NEF distribution or the Municipal Grid, the power to West Annex critical MCCs is restored via the Diesel Generator. The following issues exist with the current design: 1. There is no provision for first time energization of the system. This is problem for commissioning. Normal system energization is top down from 13.8kV to 600V to MCC to UPS. However to in order to protect/operate the 13.8kV and 600V switchgear, the 125V control power and the 120V annunciation power is required first. These ties are at the bottom of the power distribution hierarchy and require power from the UPS. The UPS requires power from the MCC which in turn requires power from the 13.8kV/600V switchgear. This is a chicken and egg scenario. Note the Diesel Generator cannot be utilized to jump start the system because it has auxiliary loads that require power from the MCCs for its first time energization. As a result the commissioning energization requires temporary power to jump start the process. (continued in the Section Below)	(Condition Description continued from above) 2. The 125Vdc control power distribution system is not backed up by its own batteries. It depends on the batteries of the UPS. This creates a Single Point of Vulnerability. Once the electrical distribution system is in service, any routine maintenance or equipment problems which remove the UPS to be on Bypass operation puts the electrical distribution in a vulnerable operating state. During this time should power be loss from NEF/Municipality, the Diesel Generator is suppose to autostart and Operator action is required to manually transfer the critical MCC's to the back up supply. However the control power (125Vdc) is dependent on the UPS batteries which will have been loss as a result of the power failure. Also the resultant loss of the UPS critical bus results in the loss of the annunciation to the electrical distribution making it difficult to assess equipment condition for power restoration. Immediate Action Taken: Identified concerns during the CORE meetings. Followed up with discussions with OPG-DTL and sent a detailed email to both the OPG-DTL and Design Agency Electrical Design Lead.	Recommended Actions: Design to complete a Failure Modes Effect Analysis to understand the integrated system operation and its vulnerabilities. Human Factors to complete a task analysis to better understand Operator actions required to support standard and non-standard operating conditions (this is an action from the CORE). These need to be completed before finalizing the design. Lessons Learned to Prevent Recurrence: CORE meetings focus on individual Design EC's and did not adequately cover the integrated operation of the entire electrical distribution system. Systems were designed focused on the project MDR. A dedicated electrical MDR and Design Manual should have been issued for this project. BANICAC 2016/08/26 14:31 Since cause is well understood and prevented, I recommend C3-NFE classification.
N-2016-20953	While performing concrete Vacuum excavation in Pipe Chase, the "chipper attachment" on excavator "pinched" a live 600V Temporary Power Supply cable. This contact "flipped" the safety GFI. No injuries or harm to workers.	Incident Area was made safe, and barriers were put in place pending investigation. Supervisors, Safety Rep, Job and Shift Manager notified. MONEYK 2016/08/25 06:55 - Duty Contract Administrator made the appropriate notifications including Shift Manager, Line Management, BTU JHSC, OPG Safety and OPG Project Manager. Met with Shift Manager and OPG Safety rep at scene.	MONEYK 2016/08/25 06:55 - OPG Safety contracted MOL as this is considered a Construction Event. OPG Safety is leading the investigation. LUXTONS 2016/08/23 10:34 - OPG Conventional safety completed investigation (24AUG2016). Contractor presented HULL to PCMD (24AUG2016). Scene released for relocation of services only on 24AUG2016. Revised EWP must be reviewed by Shift Manager before chipping work can resume.
N-2016-12449	Field Engineering Quality Surveillance has identified several areas of concern related to missed quality assurance expectations including anticipated unanswered, acceptance of facility. This trend SCR references three recent documented findings plus additional Oversight Report (attached). Review with JV Quality Assurance leadership sharing site Oper and client expectations including line management participation completed. JV acknowledgment including expected increase in OPG surveillance activities for documented improvement. Reference: N-2016-06513, N-2016-06147, N-2016-06725, D-OR-31555-C-0-022	Notification & escalation with JV partners, review of OPG expectations including line management participation. Enhancement of Field Engineering strategic surveillance and areas of focus.	
N-2015-28616	The extent of cause and condition were not satisfactorily addressed in the disposition of SCRs N-2015-11141, N-2015-16717, N-2015-17520, N-2015-24579 & N-2015-27658 as evidenced by continued Water Ingress incidents (identified during subsequent walkdown's after 16-Nov-2015, when SCR N-2015-26760 was initiated). Disposition stated in SCR N-2015-26760, does not effectively address the extent of cause and condition of continued Water Ingress, as noted in subsequent walkdown (of 6 additional locations @Genesis Dike, 1st and 2nd Off NE, 1st and 2nd Off NE, beam pocket & 2nd Off 5) on 1-Dec-2015 and 2-Dec-2015. Previous SCRs documenting rework due to water ingress (after completion of waterproofing - except N-2015-11141): 1) N-2015-11141: D2O Project 16-31555 - Re-work on 40% Mud Slab due to hydraulic action; 2) N-2015-16717: D2O Project 16-31555 - Water ingress through the rock anchor sleeves on the north 40% cliff side of excavation; 3) N-2015-17520: D2O Project 16-31555 - Rework required to exposed Dike wall concrete; 4) N-2015-24579: D2O Project 16-31555 - Extent of rework due to Leakage in first lift of Genesis Dike wall concrete per RFI 253; 5) N-2015-26760: D2O Project 16-31555 - Rework due to water ingress through Genesis dike wall	Reviewed the locations to verify that they were not damaged due to external factors and the extent of condition (i.e. specific locations impacted). OPG Project Manager & Design discipline made aware of the issue to assess if the condition does not impact the intent of the Design.	OPG Proj Mgt & Design discipline to review previous repairs and new leak areas and determine effective repair requirements. More importantly, OPG Proj Mgt & Design discipline needs to understand what is causing continued ingress of water through waterproofed wall inspite of repeat attempts to seal by injection at various locations.
N-2015-23043	1. Approximately 930 CAT ID, thousands of items was procured in 2014 under previous EPC contract. 2. Decision was made to transfer material to new EPC vendor after evaluating various other options such as FE to be performed by OPG, Retain Engineering Company etc. after Project contracting strategy was changed. 3. New EPC contract was finalized but efforts required to FI and Material transfer was not included in the scope of contract. 4. EPC material transfer guide and special memo was issued to support above decision after contract was finalized. 5. After months of efforts, material was transferred to OPG warehouse as an interim change until it is transferred to New EPC vendor. 6. Due to large volume of physical material as well as associated documents it took significant time to segregate material for new EPC vendor. 7. Material reconciliation efforts to verify physical material, quantity against documents provided by previous EPC vendor and then against DEOM had significant flaw and efforts to go through extensive information packages. 8. During above reverse various issues surfaced such as potential gap in documentation to meet new EPC vendor QA requirements, missing material, lead time required to purchase material that was not procured by previous EPC vendor or additional material required due to EC revisions, amount of efforts required to go through material transfer process and availability of resources and conflicting priorities for the available resources etc. Refer Related SCR # N-2015-16984 and N-2015-23040	1. OPG staff helped for material segregation, providing documentations, facilitated process clarifications and work with EPC vendor to go through FI and examples of FI, list requirements for new items. 2. OPG and vendor team work together to prioritize EC execution, and therefore focus on material transfer or order material for these EC. 3. EPC vendor initiated purchase inspections as soon as they identified gap, OPG approved PO4. 4. Vendor provided updates to TRF for long lead time items T1501. Project line management and escalated issues to both organizations to give priority to this work. Apparent Cause: 1. First of a kind of contracting strategy change, material transfer process or unusual circumstances or change in contracting strategy. 2. Underestimating material transfer efforts during options evaluation to deal with material	1. Managed Change in Contracting Strategy by thinking it through. 2. Understand efforts, Prioritize the work and Assign appropriate resources READJ 2015/10/08 15:30 - Reconvened C3 and do a recovery tracked on this first of a kind process to document lessons learned and corrective actions to streamline this process.
N-2015-18801	While completing the south / east corner wall pour at elev 2, a small concrete vibrator head got caught up on rebar and disconnected from the vibrator shaft when the vibrator was pulled up. The concrete vibrator head could not be retrieved.	The crew noted that the vibrator head had disconnected. As per industry standard practice, the crew replaced the head and resumed. Site supervisor was informed. The vibrator head dimensions are approximately 2 inches by 12 inches. Site QA/QC was engaged to review and assess for any potential impact. CMO was notified after the start of next shift. SCR was filed to document.	LUXTONS 2015/08/21 08:25 - Further assessment will take place once forms have been removed from the wall.
N-2015-04075	Condition: Explicit design requirements governing separation of Nuclear East Facilities (NEF) and DNGS Station grounding grids have not been established for design of main power supply (13.8 KV) to HWMB-WA from Substation 0-52800-055 (External Utility Power Supply). Neither the applicable MDR (NK38-MDR-38000-10000 Rev 3), nor the DNGS Design Manual NK38-DM-12500 for Grounding systems addresses this requirement. (Reference DECs 120472 HWMB-WA Bldg Pwr and DEC 123510 Cable Duct). Details: As per Conceptual design NK38-REP-38000-10002 and DEC120472 (MEC 170000) the Main power supply (13.8 KV) for the D2O Storage - West Annex Facility (HWMB-WA) will be sourced from external utility grid (Hydro One) 055 substation located at NEF. MDR NK38-MDR-38000-10000 Rev 3 does not specifically acknowledge that the 055 substation is located outside the DNGS Protected Area or the power supply is sourced from 055 Substation (NEF) having separate grounding grid. All MDR grounding requirements for HWMB-WA, found in MDR sections 2.2.1(8), 2.2.1(ab) and 2.4.1, require interconnection of HWMB-WA grounding system with DNGS station grounding grid and with existing HWMB grounding system. Design manual NK38-DM-12500 for Station Grounding System does not provide any design requirements for this type of grounding configuration. However NEF 55SE has stated having separate grounding grids for NEF and DNGS station ground grid without any design basis documentation. This is a non-standard grounding configuration and will require analyzed design basis / design requirement document. This is a specific design issue affecting the multiple projects. Design agency has identified the grounding interface issue to OPG design through several meetings, IRFs and SCRs; however, the respective design requirement / design issues remain unresolved.	HWMB-WA Design Agency requested clarification on undocumented / unanalyzed design requirement for grounding grid separation requirement (included by NEF SRE) via project meetings with OPG (since 27-MAY-2013) and issue in ILD / SE Kit. Regarding HWMB-WA, Distribution (RFI) in OPG Design (RFI #122, 30-SEP-2014). 2) Raised SCR to identify and resolve the deficiency in applicable design requirements.	1) OPG Design Group to formally document design requirement supported by electrical analysis for separation / no separation of the external substation 055 GROUNDING GRID (NEF) and Station ground grids in regard to 13.8 kv Power supply to HWMB-WA Building. (Reference DECs 120472 and DEC123510). 2) Update MDR NK38-MDR-38000-10000 to include grounding grid separation / no separation design requirement for HWMB-WA Supply Power. READJ 2015/01/08 09:42 - Reconvened C3 NFE for Refurbishment Design Group to complete recommended actions.
N-2014-30215	Condition: OPG approved Radiation Source Term Design Requirements are required to progress / complete HWMB-WA Shielding Analysis and dependent engineering designs. (SCHED activity ENG-122710 for OPG Approval Memo was due 19-Nov-2014). Detail: In order to perform shielding analysis and validate current shielding design for HWMB West Annex building design (EC#120343), details of the source term and the applicable radiation shielding design requirements are needed. In spite of numerous inquiries, presentations and discussions with OPG stakeholders since April 2014, no official radiation shielding design requirements have been provided. EPC design agency provided presentation on "Radiation Shielding Analysis and Source Term Requirements" at project meeting on May 29, 2014. A number of follow-up meeting, OPG Design organization committed to provide the necessary design requirements in an OPG memorandum (CORR), or other official document, that can be referenced in the shielding analysis report and MDR. This memo was to include source term input to use in analysis (contact dose rates and radionuclide makeup for high gamma doses and downgraded tanks), assumptions to use, confirmation of dose scope of enclosure and enclosure dose criteria to satisfy for both tank categories (OPG did not establish a protective dose criteria). In addition, cause the dose rates to room, zone in analysis. After receiving the action due date on 20-JUN-2014, OPG requested EPC Design Agency to prepare design requirements memo on their behalf. Memorandums were subsequently prepared and submitted to OPG for approval on 1-AUG-2014, summarizing all the input information collected from OPG responsible organizations. OPG approval on memo is required to formally document design requirements in order to complete radiation shielding design deliverables.	1) Discussed issue with OPG DTLs and DNGS Refurb Design Engineering. 2) Initiated this SCR to document delays in obtaining approved design requirements.	1) OPG Design Organization to approve HWMB-WA Radiation Shielding scope inputs and source term design requirements via NK38-CORR-23800-0511003 (attached to SCR). 2) Incorporate NK38-CORR-23800-0511003 in next revision of building MDR NK38-MDR-38000-10000. READJ 2014/12/18 10:28 - Reconvened C3 NFE for Refurb Design to review and accept memo and to schedule revision of MDR with project schedule.
N-2014-30652	While installing duct arc components, the individual traversed approximately 3m with an exposure to a 45ft fall.	The individual was immediately coached to understand his exposure. The individual's company was notified. Site supervision, the project management team and CMO were notified. Work on the duct arc was suspended until a qualified competent supervisor could attend the site.	LUXTONS 2014/11/06 07:59 - The Contractor will provide enhanced observations/surveillance, with the assistance of the CMO, of high risk activities. IPTE or when activities are impacted by changing conditions and personnel. High risk activities will be reviewed at the beginning of each shift to ensure appropriate eyes in the field. See the attached HULL for further details.
N-2014-21771	DEC 120423 - Engineering Schedule Low Item ENG/23610 OPG Accept CDS action was not completed by schedule date of July 18, 2014. This is due to Vendor disposition to Item #12 not being acceptable to OPG reviewer (see attached).	Vendor Disposition was made on July 2, 2014. Meeting with Vendor on July 3, 2014 to discuss disposition. Issues were shown to Vendor. Vendor decided to take up their line management. OPG DTL elevated into OPG Design management with a meeting with OPG Engineering Lead, Resident Engineer and Design Section Manager. OPG DTL was told to discuss with Vendor Design Section Manager. Resident Engineer discussed with OPG Drafting and determined that building different systems not within the scope of the DEC is a concern crucial to OPG Design basis concerns. Meeting 22JUL2014 held between OPG DTL and Vendor Design Section Manager where the Vendor Design Section Manager brought in the Vendor Project Manager, Vendor Design Project Manager, and Vendor Senior Engineer where their position was that no changes would be made and that if any changes made would be at the cost of OPG. Vendor Design Section Manager has not taken any action to open the DEC to determine severity of issue to date regarding the concerns.	Vendor CAR to determine if DEC 120423 meet OPG Drafting Standards Compliance and System Design practices.
N-2014-07610	While driving to site it was observed that a tractor trailer delivering concrete rig materials to the D2O project was parked on the south bound lane of Holt road around the bend south of the lagoons. This was in a low visibility location around a turn of a decreased elevation which would increase the risk of a vehicle rear ending. The attached picture shows a red truck where the truck was parked.	Contacted vendor project manager and obtained approval to have directly with the truck driver. Promptly spoke with the truck driver and determined that he had been provided no direction on where to park vehicle on site while waiting to access protected area via ASB. I requested truck driver to follow me and I escorted him to line up safely in front of the ASB in order to simulate the traffic risk.	Revised D2O Project Traffic Logistics Plan to include directions for vehicle deliveries arriving at site, and ensure rolled out to sub contractors and truck drivers. COLELLAA 2014/03/04 19:34 - Contractor Rep was coached to ensure truck deliveries are scheduled, drivers have a site contact and site map and if trucks need to enter PA, escorts are arranged to ensure proper paper work/forms are completed and pre-jobs are performed to expedite security in processing and inspection. Site logistics plan will be updated and rolled out to all contractors. Reconvened C3 NFE.
N-2014-05430	Significant mileage costs are being submitted by the vendor that were previously claimed by various management as not billable per the ES-MSA. A large portion of these costs are embedded in sub-contractor vouchers, significantly increasing the time required to review and approve Vendor payments to screen for these costs. This issue can no longer be resolved at the working level as the vendor management has recently provided direction to bill mileage going forward. Mileage is now submitted on a weekly basis for expenses not meeting the below criteria. Per ES-MSA Section 4.1 (b) of schedule E, Business Expenses. SECTION 4 - VEHICLES. 4.1 Reimbursable Vehicle Expenses: The expense of rental vehicles or personal vehicles used by Eligible Employees will be an Allowable Expense to the extent that: (b) the one-way distance between the Eligible Employee's Home Base and the Work Site is greater than 100 kilometres or the Eligible Employee is required to provide services at a location other than the Eligible Employee's Work Site.	Notified FLM, and ES-MSA Contract Owner. Requested vendor cause to submit costs identified as not billable in the contract. Requested clarification in direction on this issue has changed.	Vendor interpretation of contract and issue billing cost to PMs and vendors clarifying ES-MSA contract expectations for mileage expenses between Darlington and Pickering where mileage is less than 100 km from an employee's home base to the work site noted in the job specific ES-MSA work sheet. COLELLAA 2014/02/20 10:44 - Actions are clear and should address adverse condition. PM and counsel to TCEs for completing these actions. COLELLAA 2014/02/20 10:46 - No further evaluation is required (NFE).
N-2014-04042	Condition: DEOM GOV does not require catIDs for Cables procured by EPC Vendors, yet OLW software requires cable material identifiers (i.e. catIDs) for cable records. How Discovered: Discovered when requesting OLW package after preparing DEOMs per OPG DEOM GOV. Details of Condition: OPG DEOM procedure N-PROC-MP-0076, Rev 6, section 1.7.2.2(b)(2) provides explicit criteria for when CatIDs are required for material being procured by EPC contractors. Per this governance, catIDs are required for: All nuclear class materials; All equipment (as defined in the facility's applicable procedure, for example, N-PROC-MP-0077 or N-INS-09202-00019). Otherwise, this column (CatID) may be left blank. This rule set does not require, nor does it support, creation of CatIDs for new Cables being procured by EPC contractor. Furthermore, OPG NEWTEM groups initially rejected any/all new item catID requests from EPC vendors which not exactly meet the requirements of this governance section (citing this procedure and this section as basis for rejection at NEWTEM AR route notes). Having no governance basis, and no initial support for EPC vendor to create/use cable catIDs, EPC designs were progressed without cable catIDs. Upon submitting same engineering changes to drawing office for Online Wiring (OLW) package creation, EPC vendor was told that no cable numbers could be created without cable CatIDs. Although no governance was identified which supports this requirement, it is recognized that the Online Wiring (OLW) program uses cable-material identifiers (stock code numbers, catIDs, or any other unique identifier) to manage related cable data such as: number of conductors in cable, wire colors, unit weight per length, cable diameters, etc.). Although drawing office could create their own unique identifiers to define new cables as EPC vendors are doing to process non-CAT ID items, this is not the preferred option. OLW, like procured Material Equip.	1. Discussed issue with OPG NEWTEM group and gained support to create new catIDs for cables when requested. 2. Informed design engineers on project of requirement to identify/obtain cable catIDs for all EPC modification applications requiring OLW packages. 3. Initiated this SCR to document delay to project ECs attributed to governance gap.	DEOM procedure N-PROC-MP-0076 section 1.7.2.2(b)(2) should be revised to include catID requirement for all cables requiring OLW controls. READJ 2014/02/10 21:10 - Reconvened C3 NFE, with action for OLW group to input TPAR to align CATID requirements in N-PROC-MP-0076.
N-2014-04404	At approximately 4:30 pm, during routine equipment checking personnel found a leak within a glycol heater unit. The leak occurred as a result of a crack that developed on a hose within the unit. Approximately 1 cup (less than 8 oz) sprayed onto the frozen ground and the remaining fluid (approximately 3 cups) was captured in the spill containment unit.	The unit was shut down, and the small amount of fluid that sprayed onto the ground (less than 8 oz) and within the spill containment was immediately cleaned up with absorbent materials. The absorbed fluid and the small area of affected ground surface soil were scrapped up and placed into the spill container for disposal. The unit supplier was contacted, to remove the unit from site, to be replaced with a new unit / or to be re-certified once all necessary repairs were completed. ELS safety and project management and the CMO were notified. LUXTONS 2014/02/06 08:37 - CMO notified the Shift Manager and Environment	LUXTONS 2014/02/06 08:37 - Environment was contacted and the spill is classified a Category D - exempt, Class V per N-STD-OP-0026. Contractor to perform extent of condition for the glycol hoses in all heater units and implement corrective actions. LUXTONS 2014/02/24 15:58 - Project number corrected in the title.
N-2014-01348	Due to snowmelt and build up of ice water expelled over the south edge of the berm for approx. one hour before berm could be secure. Water collected in yard drainage. Samples were taken to chem lab to verify the contents of the water.	Notified supervisor, cmo, met with OPG project rep. and OPG environmental rep. at the site. LUXTONS 2014/01/15 17:16 - Sample results indicate that they are below the level. The tritium results were 0.0001 and 0.0005 TCi/kg. The Gross Gamma results were 0.00035 and <0.00018 TCi/L. The tritium levels are below the 0.100 TCi/kg.	LUXTONS 2014/01/15 17:18 - This spill is considered as category D, exempt (class V) as confirmed through the Environment dept.
N-2013-22011	During the installation phase of an EPC Contract, a work protection assessment was requested from the Engineering Oversight Department to determine whether or not specific components could be used to isolate a portion of this system to provide work protection for the EPC Contractor. The Engineering Oversight Department is only resourced to provide strategic oversight on the EPC Contractor, and is not resourced to provide engineering support during field execution. In the EPC Environment, the understanding is that all field support should be provided by the EPC Contractor.	To facilitate a positive outcome, the Engineering Oversight Department took ownership to prepare a work protection assessment to support field execution.	Recommend C3 SCR. Projects to review how to provide field support in the EPC Environment. KAIAN 2013/11/26 10:06 - Recommend the EO for Project. Project needs to ensure that going forward Engineering field installation support resources such as project support are properly planned for the EPC model.
N-2013-18165	Nuclear Instruction N-INS-29000-10000-R001 was not followed prior to placement of a temporary trailer on F1, an area outside of the Protected Area (PA). The requirement to follow this instruction was identified by Nuclear East Facilities (NEF) who were not consulted in advance of plans to place a trailer on F1 was not obtained and therefore did not approve of plans to place a temporary trailer on F1. It was discovered that NEF. Consequently, Nuclear Instruction has to be followed prior to equipment/trailers being brought on site. Please see attachment - this is: the N-INS-29000-10000-R001 for Temporary Facilities, this document provides the requirements for the life cycle management program - please see attachment	Permission was given by NEF to proceed with placing a trailer on F1 on 2013/08/01 provided corrective action was taken to prepare and submit the required documentation per N-INS-29000-10000-R001. An SCR was initiated to document the oversight.	C4 for trending. NEF is the landlord of areas outside the PA and must be consulted in regards to all activities in these areas, a briefing card will be prepared and distributed to communicate this requirement and prevent recurrence of this oversight. READJ 2013/08/12 - READJ 2013/08/12. Project has taken an action to complete a briefing card to be rolled out to projects and trade to ensure NEF's custody of new build land is understood. Project is also currently executing the procedure to build the trailer back into procedure compliance. READJ 2013/08/12 - Reconvened C4 for trending.
N-2013-05569	While performing an overnight walk down for project 16-31555 specifically the box drain using HP199-1 under WO 2631271, it was evident that the current final resting position of the 3" dewatering hose was a repeat event of incorrect installation as documented under SCR N-2013-03426 on June 26, 2013. WO 2631271-05 task instructions were updated to reflect the correct configuration for hose installation. NK38-WPL-20000-0380400 is the approved workplan for the execution of the box drain SPHW-1 dewatering hose installation. There was a potential for an environmental infraction if the system for the dewatering sump 0-75200-SPHW-1 was in effect. 2 attached photos capture the incident for documentation.	Contacted vendor General Foreman to identify failure, CMO, and Project Control Centre. Filed SCR to document failure to execute WO 2631271-05 as instructed.	READJ 2013/07/04 Reconvened C3 ACE for B&M to investigate and evaluate what the apparent cause is for this repeat event.
N-2012-30467	Although the proposed vapour recovery system for the new D2O Storage Facility meets the Preliminary Design Requirements (NK38-DR-38000-10001) in regards to functionality and tritium emissions, the proposed vapour recovery system and forecasted tritium emissions were found to be unacceptable to the TRF, and to both Darlington operations/environment and Refurbishment operations/environment stakeholders. Condition was discovered upon review of proposed vapour recovery unit design and forecasted tritium emissions for the new facility.	Notified FLM, and held meeting with TRF, environment, and Darlington station and Refurb DORs to confirm unacceptability of proposed solution. Action was assigned to TRF to determine what performance requirements (e.g. effluent dew point) would be acceptable to operations and the environment group for the new vapour recovery system.	Upon discussion with line management; reconvened C3 NFE. MAKDESG 2012/11/07 - Cause is inadequate Design Requirement identified for Tritium Emissions.

SCR #	Diff Rev Than Initial	Diff Sig Than Initial	S3 Mgr	Evaluation	Eval Mgr	Sending Orgs	CA Plan Due Dt	CA Plan Completed Dt	CAP Due Dt	SCR Flow	Coordinator	Coordinator Comments	Vend Init	Vend CAP INCR	Vendors	Ext WANO	Ext COG	Ext INA	Int FW	Int NA	Days At MRM	SCR Reviewed	MRM Review Dt	MRM Comments	Line Management Codes	Station Hazard Aid?	Equipment/Failure	ER Program	Failed Eqpt Type
N-2016-28727	AHMADM 2016/11/25 11:32: NFE - cause documented. Actions required to address the cause. Apparent Cause is: Procedural non-compliance (Unauthorized removal of the valve from SATR Area). Also refer to SCRs N-2016-27821 and N-2016-29051. A letter (NK38-CORR-38000-0621074 - attached) has been issued by OPG to the vendor to review the WP and to investigate deficiencies in the locking mechanisms.		Cotelia, Anthony	Mansoor Ahmad [redacted]	N-PRNRPM	N-PRFSOM, N-PRNRPM	1/5/2017	1/5/2017	2017/01/06	N	Ahmad, Mansoor		Service		ESFOX-01	N	N	Y	N	Y	8		11/25/2016		PROC NC				
N-2016-22027	TOPOLNIKA 2016/09/16 11:50 - c3 required as per Evaluation of Medical Attention and Lost Time Injuries Matrix.		Cotelia, Anthony	Mansoor Ahmad [redacted]	N-PRNRPM	N-PRNRDM, N-PRNRPM	10/17/2016	11/23/2016	2016/11/30	N			Service		AECOMINDUSTR	N	N	Y	N	Y	7		9/16/2016		CON PI SAFE				
N-2016-21436	LONGWIRD 2016/08/30 11:51 - NFE - cause documented. Actions required to address the cause. Apparent Cause is: Design/Analysis not adequate.		Zardi, Razia	Razia Zardi [redacted]	N-NRDPRM	N-PRNRPM, N-NRDPRM	9/27/2016	9/27/2016	2016/09/27	N			Service		BORTECHNOLOG-01, SLNARCONUV	N	N	Y	N	Y	7		8/30/2016						
N-2016-20953	ssed a LOW WRP# AHMADM 2016/09/02 10:24 - NFE - cause documented. Actions required to address the cause. Apparent Cause is: Poor Work Planning. EO manager acceptance per email attached. Work was stopped and all stakeholders were notified. HULL (attached) was presented by the vendor. Interim actions were taken (Barrier placed in front of cable).		Cotelia, Anthony	Mansoor Ahmad [redacted]	N-PRNRPM	N-PRNRPM	9/30/2016	9/28/2016	2016/09/30	N	Ahmad, Mansoor		Service		AECOMINDUSTR	N	N	Y	N	Y	7		9/2/2016		CON PI SAFE				
N-2016-12449	TOPOLNIKA 2016/05/26 07:17 - c3 are required due to multiple quality control issues identified at the early stages of execution.		Kennedy, Patrick	ALEXANDER TOPOLNIKOV [redacted]	N-PRPFEM	N-PRPFEM	6/23/2016	6/22/2016	2016/06/23	N			Both		SLNARCONUV	N	N	Y	N	Y	7		5/26/2016		CON PI EXE				
N-2015-28616	KEARNANC 2015/12/16 12:33 - SCR input to document and trend on-going water ingress issues with D20 Project #16-31555. Specific locations reviewed and verified to eliminate external factors being cause. OPG Project Manager and Design aware of situation. Apparent Cause: CF-W2 Design, CF-N3 Construction Deficiencies, waterproofing membrane behind concrete wall not performing completely as designed causing some pressure cracks in wall.		Cotelia, Anthony	Anthony Cotelia [redacted]	N-PRNRPM	N-PRNRPM	1/27/2016	1/27/2016	2016/01/27	N	Kaaman, Colleen		Both		ELLISDONCO03	N	N	Y	N	Y	8		12/16/2015						
N-2015-23043	MISHRAM 2015/10/14 11:06 - SCR to document material issues discovered following contract strategy change. Issues currently being addressed and will be included in project Lessons Learned as required; outside of SCR process. As pending action to track under SCR process. ROBINSONC 2015/11/05 10:41 - As per PRNMOD MRM 03NOV15 - Recategorized from C3 to C3 ACE. ROBINSONC 2015/11/13 11:06 - As per PRNMOD MRM 10NOV15 - recategorized from C3 ACE to C3 NFE. Apparent Cause: Contracting strategy change, material transfer process or unusual circumstances of change in contracting strategy.		Cotelia, Anthony	Anthony Cotelia [redacted]	N-PRNRPM	N-PRNRPM	12/1/2015	11/30/2015	2015/12/01	N	Mishra, Mukesh		N		ESFOX	N	N	Y	N	Y	8		11/3/2015		POI				
N-2015-18801	TOPOLNIKA 2015/08/26 13:26 - c3 ide required to track up repairs per recommended actions field. CF-Q4 Quality Control (QC) Functions.		Cotelia, Anthony	Mansoor Ahmad [redacted]	N-PRNRPM	N-PRFSOM, N-PRNRPM	9/23/2015	9/23/2015	2015/09/23	N			Service		ELLISDONDE	N	N	Y	N	Y	5		8/26/2015		CON PI EXE				
N-2015-04075	WARDAN 2015/01/26 10:02 - As per Jan 27,2015 PSR-MRM chair, NFE - cause documented. Actions required to address the cause. Apparent Cause is: LTA Design		Cotelia, Anthony	Andrew Ward [redacted]	N-PRNRPM	N-PRNRPM	2/25/2015	2/16/2015	2015/03/24	N	Ward, Andrew		Service		BORTECHNOLOG, ESFOX	N	N	Y	N	Y	19		1/26/2015		SCOPE				
N-2014-30215	WARDAN 2015/01/14 08:26 - NFE - cause documented. Actions required to address the cause. Apparent Cause is: LTA Design requirements.		Zardi, Razia	AMANDA DUTTA RAY [redacted]	N-NRDPRM	N-PRNRPM, N-NRDPRM	2/24/2015	2/10/2015	2015/02/24	N	Ward, Andrew		Service		BORTECHNOLOG	N	N	Y	N	Y	27		1/7/2015						
N-2014-30652	WARDAN 2014/11/24 08:15 - Apparent Cause Evaluation required. CF-Q2 Manual		Cotelia, Anthony	MARTIN SPELT [redacted]	N-PRNRPM	N-PRFSOM, N-PRNRDM, N-PRNRPM	1/12/2015	1/26/2015	2015/01/26	Y	Ward, Andrew		N		ELLISDONDE	Y	Y	N	N	Y	11	Y	11/24/2014		CON PI SAFE				
N-2014-21771	MATHEWK 2014/08/01 14:10 - Cause known CF-J i.e. Change Management: Accuracy of the change was not verified to ensure DEC 120423 meet OPG Drafting Standard compliance.	MATHEWK 2014/08/01 14:10 - Not significant by itself, but has potential	Leekha, Rajeev	Razia Zardi [redacted] AMANDA DUTTA RAY [redacted]	N-NRDEM	N-NRPESPM, N-NRDEM	6/29/2014	8/27/2014	2014/08/29	N		Requested Eng Lead to provide additional information to enable SCR disposition as appropriate. July 29: As understood, the human performance issue involved is not checking the drafting standard requirements, as well as procedures related to System classification (SCI).	Service		BORTECHNOLOG-01, BLACKMCDONAL	N	N	Y	N	Y	0		8/1/2014		SCH RISK				
N-2014-07610	RAZVIP 2014/03/05 09:29 - NFE - cause documented. Actions required to address the cause. Apparent Cause is: Inadequate vendor direction/communication to delivery driver.		Cotelia, Anthony	DAN LONGWIRE [redacted]	N-PRDPDM	N-PRDPDM, N-PRNRDM	4/2/2014	3/13/2014	2014/04/02	N	Razvi, Paul		Both		BLACKMCDONAL	N	N	Y	N	Y	1		3/5/2014						
N-2014-05430	RAZVIP 2014/02/21 13:16 - NFE - cause documented. Actions required to address the cause. Apparent Cause is: Inappropriate vendor human performance.	RAZVIP 2014/02/21 13:16 - Inadequate human performance	Cotelia, Anthony	Paul Razvi [redacted]	N-PRDPDM	N-PRDPDM, N-PRNRDM	3/24/2014	2/25/2014	2014/03/24	N	Razvi, Paul		Both		BLACKMCDONAL	N	N	Y	N	Y	0		2/24/2014		CON PI HP				
N-2014-04042	RAZVIP 2014/02/14 08:58 - C3 NFE. CA Plan with Actions required.	RAZVIP 2014/02/14 08:58 - C3 NFE per Julian Read. Apparent cause appears to be inadequacies in technical procedure	Cotelia, Anthony	Paul Razvi [redacted]	N-PRDPDM	N-PRNRDM, N-PRDPDM	3/14/2014	2/21/2014	2014/03/14	N	Razvi, Paul	Drawing Office feedback - The Drawing Office can specify a cable in the OLW program as an Manufacturer cable but this is reserved for situations where the cable is being supplied with the equipment and typically hard-wired to that equipment with a connector plug to station systems. This nuance/unclear cable must be clearly and completely identified down to conductor colour and can not be changed otherwise all OLW inputs will need to need removed and redone. For this particular	Both		BORTECH	N	N	Y	N	Y	4		2/14/2014						
N-2014-04404	RAZVIP 2014/02/18 16:52 - Actions required to address the cause. Apparent Cause is: Equipment failure.		Cotelia, Anthony	Paul Razvi [redacted]	N-PRDPDM	N-PRNRDM, N-PRDPDM, N-PRNRDM, N-PRNSPM	3/25/2014	2/25/2014	2014/03/25	N	Razvi, Paul	C3 NFE per Julian Read. Contractor to perform extent of condition review & submit findings to OPG.	Service		BLACKMCDONAL	N	N	Y	N	Y	4		2/25/2014		ENV SPILLS				
N-2014-01348	SCR recategorized to C3 ACE per MRM Chair approval.		Cotelia, Anthony	Mansoor Ahmad [redacted]	N-PRSPM	N-PRNRDM, N-PRDPDM	2/26/2014	2/25/2014	2014/02/26	N	Razvi, Paul		Service		BLACKMCDONAL	N	N	Y	N	Y	0	SCR recategorized from C3 NFE to C3 ACE	1/29/2014		CON PI ENV MANAGE METHLEN V-SPILLS				
N-2013-22011	MATHEWK 2013/12/04 08:21 - Cause known CF-B1, Administrative procedure (The interface agreement) not clear for some circumstances, such as who should provide the engineering analysis support that may be required for work permits during field work/installations. As requested by December 10th MRM, this SCR should be evaluated to ensure Ops are included in the process before going to Design, when work protection is required.	MATHEWK 2013/12/04 08:21 - Not significant by itself, but has potential	Kai, Alan		N-NRDEM	N-NRDEM	1/15/2014	2/14/2014	2014/02/15	N			Service		BLACKMCDONAL	N	N	Y	N	Y	0	email to EO Manager Dec. 11, 2013	12/4/2013						
N-2013-18165	OMARISH 2013/08/22 - SCR recategorized at the PRNMOD MRM of 15Aug2013 from C4 to C3 NFE - cause documented. Actions required to address the cause. Apparent Cause is: Lack of understanding that NEF is landlord for new build land	OMARISH 2013/08/22 Has potential to be significant	Popovic, Dragan	DAN LONGWIRE [redacted]	N-PRDPDM	N-PRDPDM, N-PRPFPM	9/16/2013	8/13/2013	2013/09/16	N	Razvi, Paul		N		BLACKMCDONAL	N	N	Y	N	Y	0		8/16/2013		PROC NC				
N-2013-05569	Apparent Cause Evaluation required.		SOLANKI, RAMESH	DAN LONGWIRE [redacted]	N-PRDPDM	N-PRNRDM, N-PRDPDM	8/12/2013	8/9/2013	2013/08/12	N			Both		BLACKMCDONAL	N	N	Y	N	Y	11		7/15/2013						
N-2012-30467	Apparent Cause Evaluation required.		Watts, Stuart	Jeff Mills [redacted] DAN LONGWIRE [redacted]	N-NRDEM	N-PRNRDM, N-PRDPDM, N-NRDEM	12/11/2012	12/10/2012	2012/12/11	N	Mills, Jeff		Both		BLACKMCDONAL	N	Y	N	N	Y	0	GUASTECI 2012/12/10 - Transferred from the NRSPS to PRNMOD MRM	11/13/2012		PROC NC				

SCR #	Discussion of Facts	Conclusions	Previous Similar Condition	Analysis Methodology	Action Reqd	Addl Action Reqd	ACE	Coordinator Disposition	Discussion With Initiator	Event #	Initiator Req	% Power	Has Attachments
N-2016-28727	NA for NFE SCRs	Nuclear Class III valve 6-38110-V1001 was stored in a contained FB location in HWMB. It was discovered that the SATR area was dismantled and the valve was moved. The valve was later discovered in the basement of HWMB. Apparent Cause: Procedural non-compliance - Un-authorized dismantling of SATR area. Work groups responsible for the dismantling were coached. Actions are initiated per this SCR (Assignment #1) for the vendor to confirm that QA controls for the valve were maintained and is considered fit for installation.	NA for NFE SCRs	NA for NFE SCRs	28197272				Not Applicable for No Further Evaluation Only				Y
N-2016-22027	PROBLEM STATEMENT: September 05, 2016 at 17:20 a contract worker was hit by a steel U-bar piece of the forehead. This happened when the worker was pulling the steel U-bar piece upward. This caused small cut to the forehead. It had the potential of causing more serious injury. IMMEDIATE ACTIONS: EXT was called. All stakeholders including the Shift Manager were notified. The worker was sent to hospital as recommended by EXT. Worker received 5 stitches but returned to normal duties the same shift. CRITICAL FACTS: Project # 16-31555: D2O West Annex at DNGS is under execution with AECON as the prime contractor. One of the contract workers was pulling steel U-bar piece upward when it became stuck. Worker used additional force to pull up when U-bar became dislodged and struck worker in forehead above eye area, causing small cut to forehead. Worker did not lose consciousness and was responsive to EXT evaluation. The worker was using all the appropriate PPEs (Gloves, hard hat, safety glasses). RISK/CONSEQUENCES: The event had the potential to cause more serious injury.	Apparent Cause: Lack of appropriate Questioning Attitude. When the U-bar got stuck, the worker should have stopped using Questioning Attitude and discussed the path forward with the supervisor/peers. Appropriate tool (e.g. hammer) could have been used to get the U-bar dislodged in a controlled manner. AECON submitted an Accident/Incident Investigation Report (attached). This report concluded that the apparent cause was that the worker tried to remove the bar manually by leaning forward to apply additional pressure and as such putting him vulnerable to potential injury. The worker should have backed out and used the appropriate tool. The worker was accordingly coached.	All three SCR databases (DN, PN & NOS) were searched to find any similar incident. None was found. Another search was made with the following criterion; Vendor = AECOMINDUSTR, Event Based Code = SAF 3 - Employee Injuries, SCR date = Since 01 Nov 2015 (when AECON started as ES MSA vendor). 26 SCRs were found which met the above criteria. (Reference spreadsheet attached). 2 of these SCRs were C3 ACE (including this SCR) and both are under evaluation. 2 SCRs were categorized as C3 NFE. All other SCRs were categorized as D3/D4. These incidents occurred when workers were engaged in material handling, grinding, drilling, scaffolding, excavating, working near electrical hazards etc. None of the incidents documented in the above SCRs were considered LTA (Lost Time Accident). The affected workers returned to duties the same or the next shift.	- The Apparent Cause Evaluation was completed using Barrier Analysis Worksheet N-FORM-10134 (attached). - Discussions with the relevant personnel from Design Projects and CMO	28195837								Y
N-2016-21436	NFE	NFE	NFE	NFE	28193473				Initiator contacted for input.		Y	NA	N
N-2016-20953	NA for NFE SCRs	Apparent Cause: Poor Work Planning. No injuries or harm to the workers. OPG Safety completed their investigation and classified the event as low WRP#. MOL were also notified. HULL was presented by the vendor. Immediate actions taken: - Excavator operator stopped the hoeramming once he observed other workers informing the spotter that power had been interrupted to the lower portion of the D2O basement. - The scene was quarantined/secured until the investigation and necessary notifications were completed. - The power source of the damaged cable was locked out and tagged and alternate power sources were established for the project team for lighting and dewatering purposes at the D2O facility.	NA for NFE SCRs	NA for NFE SCRs					Initiator not reachable. His/her immediate supervisor contacted.	MOL			Y
N-2016-12449	Not required per N-PROC-RA-0022 section 1.1.3. Non-conformances and in-process quality issues within vendor control and accountability shall be managed through their respective corrective action or non-conformance programs. Project managers should provide regular oversight of vendors to ensure they are identifying and managing issues appropriately within their management systems. SCRs should not be generated in the OPG database for these incidents. Supply chain has accepted an action to begin the NCAR process.	Not required per N-PROC-RA-0022 section 1.1.3	Not required per N-PROC-RA-0022 section 1.1.3	Not required per N-PROC-RA-0022 section 1.1.3	28190535				Initiator contacted for input.		Y	NA	Y
N-2015-28616	NA - apparent cause known	NA - refer to causal factor codes	NA - apparent cause known	NA - apparent cause known	28185406				Initiator contacted for input.		Y		N
N-2015-23043	Approximately 930 CAT ID, thousands of items was procured in 2014 under previous EPC contract. Decision was made to transfer material to new EPC vendor after evaluating various other options after Project contracting strategy was changed. New EPC contract was finalized but efforts required for FI and Material transfer were not included in scope of contract. EPC material transfer guide and special memo was issued to support above decision after contract was finalized. After months of efforts, material was transferred to OPG warehouse as an interim change until it is transferred to New EPC vendor. Significant time was needed to segregate material for new EPC vendor due to large volume of physical material and documentation. Material reconciliation efforts to verify physical material, quantity against documents provided by previous EPC vendor and then against DEOM had significant flaw. During this exercise, various issues surfaced such as potential gap in documentation, missing material, lead time required to purchase material that was not procured by previous EPC vendor or additional material required due to EC revisions, amount of efforts required to go through material transfer process and availability of resources and conflicting priorities for the available resources. Refer Related SCR # N-2015-16984 and N-2015-23040	Apparent Cause is CF-G2 Task Scoping & Planning: Contracting strategy change, material transfer process or unusual circumstances of change in contracting strategy	N/A - Apparent cause is known.	N/A - Apparent cause is known.	28183427				Initiator contacted for input.				N
N-2015-18801	As per Condition description	Apparent Cause: Quality Control issue. Non Conformance Report (NCR) is to be initiated and dispositioned appropriately.	NA for NFE SCRs	NA for NFE SCRs									Y
N-2015-04075	Problem Statement: Grounding Separation Design Requirements are not available. Detailed Discussion of Facts: During the execution of the EP/HSA temporary power tie-in for T11 facilities 23/1, it was identified that the grounding requirements for connection between facilities ground and station ground were unclear (N-2014-22936). A subsequent investigation identified that although historic practice on site was to keep the two grounding systems separate, the two systems were shown to be connected through field measurement (D-2014-24792). The site ESA inspector was informed of the finds of the finding in September 2014. The ESA issued an email on February 12, 2015 to Facilities identifying that interconnection of the two grounding systems is required and that no further connections between the two electrical systems would be permitted until adequate grounding connections and analysis demonstrating code compliance was complete. A meeting was held with ESA, Facilities, Plant Design, and Refurbishment Design on February 20th to clarify ESA expectations (refer to NK38-CORR-07888-0523889). Status/ Consequences: Impacts on the construction schedule of: - RFG - EP/HSA - Power and Electrical Distribution - D2O Storage - IWS. Interim Actions Taken: Issued "Darlington Refurbishment Grounding Design Interim Resolution Action Plan". For a copy of this plan, please contact Anthony Cotelia	Not required as per N-PROC-RA-0022	Not required as per N-PROC-RA-0022	Not required as per N-PROC-RA-0022	28175484				Initiator could not be reached.		Y		Y
N-2014-30215	The modification design requirement and design basis documents available do not provide the expected radiological sources to determine if the cost design features of DEC 120471, DEC 120343 and DEC 121130 meet Modification Design Requirement NK38-MDR-38000-10000 R003 Section 2.2.1 d) Provide radiation shielding and radiological zones. ROM F has drafted a memorandum ROM Doc No: 13355-23918-0250 OPG Doc No: NK38-CORR-23800-0511003 based on various exchanges, emails and meetings with OPG stakeholders. ROM F believes a similar document should have been provided by OPG to ROM F and that it should have been in or referenced by the Modification Design Requirement. Modification Design Requirement has not been updated to date and several RFI's are being used to direct the contractor to continue work with OA authorization while Refurb Design Management determines how to update the Modification Design Requirement given lack of available personnel. Nuclear Manager ALARA has provided his review and his comments have been incorporated. See attached email. OPG DTL notified OPG DEM and Engineering Lead that the Cost Oversight engineer recommended that a radiation shielding specialist be involved in the preparation since the oversight engineer did not believe they were qualified to prepare the memo - 14AUG2014 (see attached email).	1) Modification Design Requirements: Modification Design Requirement Rev 000 was produced by ROM F and the requirement was never challenged to be difficult to meet. The operation of the existing Heavy water management building and the movement of heavy water has resulted in the present radiological fields experienced in the building. DSCs are assessed to ensure that radiological shielding is adequate or that mitigating measures have been taken. 2) Stakeholder input during MDR development: Radiological Shielding Specialist was not involved with the development of the Modification Design Requirement. The specialist may have been able to define the requirement so that the shielding design could have been analyzed. The apparent cause of the condition is attributed to: Lack of experience and knowledge in the area of radiation shielding resulting in Modification Design Requirement section 2.2.1 d) not having any reference for a vendor to be able to design to.	None	Barrier Analysis method was performed per N-CMT-15345-00001, and the barrier analysis worksheet, N-FORM-10134, N-STD-RA-0008 and N-GUID-01966-10002, as applicable.	28174474				Initiator contacted for input.		Y		Y
N-2014-30652	See Attached Incident Investigation Report. The following is an excerpt from Incident Investigation Report: Executive Summary. What happened: On November 3rd, 2014 at approximately 10:00 h a sub-contractor supervisor who was working on a duct arc installation, was exposed to a 14 m falling hazard, while traversing 3 m to install duct arc components. How it happened: the duct arc (jib crane) was installed on the water. Task was to rig and connect/crane the duct. During rigging, supervisor accessed the work from a stair tower that was located about 3 m from the duct. The supervisor's lanyard tied off to the stair tower would not extend far enough to permit connection of his second lanyard to the duct in order to maintain 100% tie off. The worker appeared to have lost situational awareness, that he was at height, made an error in disconnecting his fall arrest lanyard (skill based performance mode), then appeared to slightly panic when realization of situation was recognized. The circumstances were setup by flawed defense in safe work planning - hazard was not eliminated or controlled as dictated by both sub-contractors and OPG procedures. Latent Organizational Weaknesses in Project Oversight Plan execution, specifically Project Oversight Plan requirements for the review and approval of safe work plans appeared to have been omitted from the safe work plan that was used. The safe work plan was generic for the entire sub-contractor project, and not a specific step-by-step analysis of the hazards for the conditions of the job site on the day of the event. Oversight effectiveness was adversely affected by the transition of OPG's role of Prime Contractor. This decision was made 17 days prior to event. The Contract Management Office (CMO) staff was distracted from their oversight duties to perform tasks previously done by the Contractor. All key individuals involved with the event had received required external and internal training.	Direct Cause: Sub-contractor worker disconnected his fall arrest lanyard. Apparent Cause: Safe work planning execution was ineffective in identifying the hazards, critical steps, and method to perform the task that would eliminate the exposure. Contributing Causes: Ineffective methods to identify, review High Hazard Work prior to execution. Reference attached Incident Investigation Report	The extent of continuing risk due to the adverse conditions in the problem statement were addressed by interim actions: Stopping all work on site by the worker and subcontractor pending review and approval of corrective actions from the subcontractor. Contractor implemented enhanced surveillance and observations of high risk activities. Human Performance Lessons Learned was analyzed and presented at DNGS PCC. The lessons learned were shared with all DNGS projects, PNGS and Nuclear Waste PCC's. See attached Incident Investigation Report.	See Attached Incident Investigation Report	28174116								Y
N-2014-21771	Multiple discussions with Vendor Mechanical Engineering Manager, Resident Engineer and Design Authority. Vendor understands Ontario Power Generation use of SCIs and how DECs are arranged to be system based designs. The Vendor has stated that the cost and schedule impact would be significant to cause an overall schedule delay on the project. The decision is still with the Design Authority for decision making. Additional actions through Partial AFS of the systems may resolve this issue.	OPG ECC and procedures do not give best practices when developing a Design EC for building a new system and how the use of SCIs are an important feature in a design. Tribal knowledge from Ontario Hydro and AECL is what has kept this best practice going internally but with no documentation the Vendor is most likely to miss this best practice. Also, new systems are not usually designed and installed at OPG so the fundamental best practices for system design are rarely utilized.	None	None - Not required	28170287				Initiator contacted for input.		Y	NA	Y
N-2014-07610	Problem Statement: Tractor-trailer delivering materials for Project was found to be parked in an inappropriate and low-visibility location. Detailed Discussion of Facts: While driving to OPG Darlington site, OPG employee observed a tractor-trailer delivering concrete rig materials to the D2O Project 16-31555 which was parked on the south bound lane of Holt road around the bend south of the lagoons. This was in a low visibility location around a turn of a decreased elevation which would increase the risk of a vehicle rear ending. OPG employee contacted vendor project manager and obtained approval to liaise directly with the truck driver. Discussions revealed that the truck driver had not been provided any directions on where to park vehicle on-site while waiting to access protected area via ASB. OPG employee requested truck driver to follow him and escorted him to line up safely in front of the ASB in order to simulate the traffic risk. Coaching was provided to contractor Rep to ensure truck deliveries are scheduled, drivers have a site contact and site map, and if trucks need to enter Protected Area (PA), escorts are arranged to ensure proper paper work/forms are completed and P-JBs are performed to expedite security in processing and inspection. D2O Project Traffic Logistics Plan has been revised to include direction for vehicle deliveries arriving at site. Risks/ Consequences: Vehicles parked inappropriately in low visibility location may increase the risk of collision. Interim Actions Taken: OPG employee requested truck driver to follow him and escorted him to line up safely in front of the ASB to eliminate the traffic risk.	Not required as per N-PROC-RA-0022 (NFE). The apparent cause is inadequate project site logistics plan & inadequate vendor communication.	Not required as per N-PROC-RA-0022 (NFE).	Not required as per N-PROC-RA-0022 (NFE).	28166272				Initiator contacted for input.		Y	NA	Y
N-2014-05430	Problem Statement: Contractor employees are submitting mileage expenses that are not billable under ES-MSA. The ineligible mileage expenses are embedded in sub-contractor vouchers & OPG project managers have to spend significant time to review the Vendor payments in order to ensure the ineligible mileage claims. Detailed Discussion of Facts: Significant mileage costs are being submitted by the vendor that were previously claimed by various management as not billable per the ES-MSA. A large portion of these costs are embedded in sub-contractor vouchers, significantly increasing the time required to review and approve Vendor payments to screen for these costs. This issue can no longer be resolved at the working level as the vendor management has recently provided direction to bill mileage going forward. Mileage is now submitted on a weekly basis for expenses not meeting the below criteria. Per ES-MSA Section 4.1 (b) of schedule E, Business Expenses. SECTION 4 - VEHICLES. 4.1 Reimbursable Vehicle Expenses: The expense of rental vehicles or personal vehicles used by Eligible Employees will be an Allowable Expense to the extent that: (b) the one-way distance between the Eligible Employee's Home Base and the Work Site is greater than 100 kilometres or the Eligible Employee is required to provide services at a location other than the Eligible Employee's Work Site.	The apparent cause appears to be inadequate human performance and inadequate vendor adherence to ES-MSA terms and conditions. (C3 NFE - Not required as per N-PROC-RA-0022)	(C3 NFE - Not required as per N-PROC-RA-0022)	Discussions were held with all parties to obtain facts which led to the conclusions. (C3 NFE - Not required as per N-PROC-RA-0022)	28165331				Initiator contacted for input.		Y		N
N-2014-04042	Detailed Discussions of the Facts: Problem Statement: DEOM governance does not require CAT IDs for Cables procured by EPC Vendors, yet OLW requires CAT IDs for cable records. The governance is not aligned with OLW requirement. Detailed Discussion of Facts: OPG DEOM procedure N-PROC-MP-0076, Rev 6, section 1.7.2.2(b)(2) provides explicit criteria for when CAT IDs are required for material being procured by EPC contractors. Per this governance, CAT IDs are required for: All nuclear class materials; All equipment (as defined in the facility's applicable procedure, for example, N-PROC-MP-0077 or N-INS-09202-00019). Otherwise, this column (CAT ID) may be left blank. This rule set does not require, nor does it support, creation of CAT IDs for new cables being procured by EPC contractor. Furthermore, OPG NEWTEM groups initially rejected any/all new item CAT ID requests from EPC vendors which do not exactly meet the requirements of this governance section (citing this procedure and this section as basis for rejection in NEWTEM AR route notes). Having no governance basis, and no initial support for EPC vendors to create/use cable CAT IDs, EPC designs were progressed without cable CAT IDs. Upon submitting same engineering changes to Drawing Office (DO) for Online Wiring (OLW) package creation, EPC vendor was told that no cable numbers could be created without cable CAT IDs. Although no governance was identified which supports this requirement, it is recognized that the Online Wiring (OLW) program uses cable-material identifiers (stock code numbers, CAT IDs, or any other unique identifier) to manage related cable data such as: number of conductors in cable, wire colors, and weight per length, cable diameters, etc.). Although DO could create their own unique identifiers to define new cables as EPC vendors are doing to process non-CAT ID items, this is not the preferred option.	The apparent cause appears to be inadequacies in governance (DEOM procedure). C3 NFE - Not required as per N-PROC-RA-0022	C3 NFE - Not required as per N-PROC-RA-0022	Discussions were held with all parties to obtain facts which led to the conclusions. C3 NFE - Not required as per N-PROC-RA-0022	28164915				Initiator contacted for input.				N
N-2014-04404	Problem Statement: Personnel discovered that glycol had leaked from a cracked hose inside a heater unit (Repeat Event) 3. Detailed Discussion of Facts: During routine daily equipment checks, contractor personnel found a leak within a glycol ground heater unit which is used to thaw the ground. The leak occurred as a result of a crack that developed on a hose within the unit. Approximately 1 cup (less than 8 oz) sprayed onto the frozen ground and the remaining fluid (approximately 3 cups) was captured in the spill containment unit. This is a repeat event. The unit was shut down, and the small amount of fluid that sprayed onto the ground (less than 8 oz) and within the spill container was immediately cleaned up with absorbent materials. The absorbed fluid and the small area of affected ground surface soil were scrapped up and placed into the spill container for disposal. Environment was contacted and the spill is classified a Category D - exempt, Class V per N-STD-OP-0026. The heater unit is leased from an outside supplier. The outside supplier is responsible for routine inspection and maintenance of the heater unit. Contractor and sub-contractor only perform routine equipment checks of the ground heater unit. All heaters were reviewed and checked for leaks, those machines found with leaks were removed from site. The remaining units were tested by heater supplier (United Rentals) and placed inside the F1 fenced footprint. The area of F1 has a liner that will withstand sulphuric acid. The heater units were then placed inside a localized spill containment basin. All were again re-inspected and authorized for use. A 24-hour heater watch has also been initiated.	The apparent cause is Equipment failure. (C3 NFE - Not required as per N-PROC-RA-0022)	Searched all OPG data bases and COG website for OPEX using %glycol leak%glycol leak from ground heater% from: 11FEB13 to 10FEB14. SCR# D-2008-01194 describes a glycol leak from a ground heater which resulted in 80L of glycol spilling out. This was categorized as a C2 SCR. Five (5) other SCRs were found related to glycol leak. However, none of these SCRs are directly related to the discussed problem. There were no relevant SCR's with actions assigned that could have assisted in correcting our adverse condition. (C3 NFE - Not required as per N-PROC-RA-0022)	Communication with all parties (Design Projects, Sub-contractor EllisDon, Black & MacDonald, CMO etc.) to obtain facts which led to the conclusions above. (C3 NFE - Not required as per N-PROC-RA-0022)	28165840				Initiator contacted for input.				N
N-2014-01348	Problem Statement: Personnel discovered that glycol had leaked from a cracked hose inside a heater unit (Repeat Event) 3. Detailed Discussion of Facts: During routine daily equipment checks, contractor personnel found a leak within a glycol ground heater unit which is used to thaw the ground. The leak occurred as a result of a crack that developed on a hose within the unit. Approximately 1 cup (less than 8 oz) sprayed onto the frozen ground and the remaining fluid (approximately 3 cups) was captured in the spill containment unit. This is a repeat event. The unit was shut down, and the small amount of fluid that sprayed onto the ground (less than 8 oz) and within the spill container was immediately cleaned up with absorbent materials. The absorbed fluid and the small area of affected ground surface soil were scrapped up and placed into the spill container for disposal. Environment was contacted and the spill is classified a Category D - exempt, Class V per N-STD-OP-0026. The heater unit is leased from an outside supplier. The outside supplier is responsible for routine inspection and maintenance of the heater unit. Contractor and sub-contractor only perform routine equipment checks of the ground heater unit. All heaters were reviewed and checked for leaks, those machines found with leaks were removed from site. The remaining units were tested by heater supplier (United Rentals) and placed inside the F1 fenced footprint. The area of F1 has a liner that will withstand sulphuric acid. The heater units were then placed inside a localized spill containment basin. All were again re-inspected and authorized for use. A 24-hour heater watch has also been initiated.	Primary Failed Barrier: Berm for C13 Project overflowed as a result of severe winter weather (snow and ice storms) sump pump, this was followed by a warm up period causing an overflow of the Berm. Apparent Cause (How Barrier Failed): C13 project was extended into the winter months due to a delay on the F1 phase. Risk to the system from severe cold weather was not anticipated. Why Barrier Failed: CF-J Change management changes to the C13 schedule were not effectively planned implemented and monitored. CF-L3 Management assessment process in-house OPEX was not effectively used to prevent the problem. Closed out SCRs: Not Applicable	Searched all OPG data bases and COG website for OPEX using; %water overflow over Berm; %water runoff in C13 yard drainage% from: 02JAN13 to 14JAN14. There were no relevant SCR's with actions assigned that could have assisted in correcting our adverse condition.	This apparent cause evaluation was completed using Barrier Analysis, N-FORM-10134 attached. Discussions were held with all parties (Design Projects, Field Engineering/CMO, Contractor, & Nuclear Refurbishment) to obtain facts which led to the conclusions.	28164912								Y
N-2013-22011	This SCR identifies the following issue: 1) Interface agreement with EPC is not clear for some circumstances, such as who should provide the engineering analysis support that may be required for work permits during field work/installations. 2) Evaluate to ensure that Ops are included in the process before going to Design, when work protection is required.	OPG Staff use of authorized contractual and work planning documents. Specifically the following documents: ES-MSA (Extended Services Master Services Agreement) APPENDIX 5 - TERMS AND CONDITIONS FOR CONSTRUCTION Clause 2.5 Safety Work Protection 5.2) Work Protection: The Contractor will provide the Project under work protection ensuring that equipment being worked on is safely isolated and de-energized. Generally, OPG will provide isolation and de-energization, although the Contractor is responsible for coordinating all work protection with OPG's Project Representative or his or her OPG Designated Delegate. Under special circumstances, suitably trained and qualified members of the Contractor's Personnel may be permitted to apply hasten administered work protection in accordance with OPG's work protection code, a copy of which has been made available to and reviewed by the Contractor. NK38-PLAN-38000-10002 - D2O Storage Project: Project Oversight Plan Section 5.0 Engineering/Design Oversight 5.1 - Objectives: Oversight shall be provided for the execution of engineering processes and completion of engineering deliverables by the Contractor to ensure requirements of the contract items and conditions fulfilled in a timely way with the appropriate level of quality. Evaluation to ensure OPS are included in the process before going to design, when work protection is required was determined to be achieved. Shift Manager advised use of AWPP, AWPP was already an operations approved document, Work Plans were approved by Operations. Evidence attached in E-mail. There were no failed barriers regarding this issue.	There are no closed out SCRs in the evaluation. None: There were no similar SCRs regarding Refurb Engineering providing work protection or isolation assessments.	Barrier Analysis was used for the evaluation. Barrier Analysis worksheet attached to SCR.	28164640				Initiator contacted for input.		N	NA	Y
N-2013-18165	Problem Statement: Nuclear Instruction N-INS-29000-10000-R001 was not followed prior to placement of a temporary trailer on F1, an area outside of the Protected Area (PA). Detailed Discussion of facts: The requirement to follow this instruction was identified by Nuclear East Facilities (NEF) who were not consulted in advance of plans to place a trailer on F1. NEF was not informed and therefore did not approve of plans to place a temporary trailer on F1. Consequently, Nuclear Instruction has to be followed prior to equipment/trailers being brought on site. Please see N-INS-29000-10000-R001 for Temporary Facilities, this document provides the requirements for the life cycle management program.	Not Required per N-PROC-RA-0022 (NFE).	SCRs closed out to this one: N-2013-04394 (same issue addressed by this CAP).	Not Required per N-PROC-RA-0022 (NFE).	28159991								N
N-2013-05569	Problem Statement: Project 16-31555 Box Drain Hose not installed per work order task instructions. Detailed Discussion of Facts: While performing an overnight walk down for project 16-31555 specifically the box drain using HP199-1 under WO 2631271, it was evident that the current final resting position of the 3" dewatering hose was a repeat event of incorrect installation as documented under SCR N-2013-03426 on June 26, 2013. WO 2631271-05 task instructions were updated to reflect the correct configuration for hose installation. NK38-WPL-20000-0380400 is the approved workplan for the execution of the box drain SPHW-1 dewatering hose installation. Interim Actions Taken: Contacted vendor General Foreman to identify failure, CMO, and Project Control Centre. Filed SCR to document failure to execute WO 2631271-05 as instructed. Risk Consequences: There was a potential for an environmental infraction if the system for the dewatering sump 0-75200-SPHW-1 was in effect.	Apparent Cause: Human Performance - Procedural Adherence. Action on vendor to perform their own internal evaluation may determine underlying causes and action to prevent/reduce recurrence.	Search of all 3 SCR databases reveals many similar occurrences of LTA procedure adherence.	Reviewed related documents, discussions with Projects.	28158842						N	NA	Y
N-2012-30467	Problem statement: Improper scoping of modification which resulted in scope creep. Detailed Discussion of Facts: Preliminary design requirements (PDR) document (NK38-DR-38000-10001) approved in October 2012 was included in order to provide input for the vendor in the creation of the conceptual design report (NK38-REP-38000-10002 approved in November 2012) for the new heavy water management building. The intention was to follow up the PDR with a modification design requirement (MDR) document once a conceptual design was approved. This was not done, rather it was decided that a MDR would be completed later in the project. Scope definition phase of N-PROC-MP-0090 is where modification outline/MDR is created and approved and scope of modification is defined. It is during this stage where all risks associated with the modification are reviewed and the various stakeholders' feedback is obtained. Project team decided to issue EPC contract for the design of the Heavy water management building using a PDR/SOW/CDR document without going through the scope definition phase of N-PROC-MP-0090. As the team was working through the modification outline, MDR and design scoping checklist the environmental stakeholder identified the requirement that the Darlington Refurbishment Project (which heavy water management building is a part of) is to ensure excessive emitter. Scope change/rework was required as the vendor design was based on the PDR/technical specification did not contain all of the required information to properly scope/define the modification. These requirements were identified much later during the modification scoping phase when the MDR/mod outlines were being prepared. Additionally, the PDR specified the technology that was to be used for D2O vapor recovery system (this was the same as the existing TRF facility OPEX at end project). Interim action: There are no interim actions associated with this CAP. Preliminary design requirements are no longer utilized and there are existing processes and procedures (N-INS-00700-10007 and N-PROC-MP-0090) in place to avoid this situation from re-occurring in the future.	Consequences of this adverse condition: The adverse condition has an economic impact to OPG. The EPC contract was awarded to the vendor CDR/PDR/SOW documents prior to scope definition as defined in N-PROC-MP-0090 being completed. Increased scope cost may have been avoided if modification scope definition phase was completed prior to issuing EPC contract for design. It should be noted that this is one of the first large EPC contracts awarded. This is a new, unfamiliar process for OPG and its contractors.	SCRs closed out to this one: There are no SCRs closed out to this one. Previous Similar Conditions: Searched all 3 OPG data bases and COG website for OPEX using "long lead", "Preliminary design requirements" and "missed stakeholder" between dates 01JAN07 to 05DEC12. No relevant SCRs were found with corrective actions that could have assisted in correcting our adverse condition.	Apparent Cause Analysis Methodology: Barrier Analysis was used for this evaluation. N-FORM-10134 attached. The Apparent cause(s) are: Project team utilized PDR/CDR/SOW to define the scope of the modification. During the preparation of MDR and mod outline package, the requirement for zero emissions from heavy water management building was identified and the scope of modification had to be revised. Long lead item process was started early in the modification scope definition phase when it should have been started once the modification scope definition was completed. Additionally, all nuclear class systems and components are to have approved or accepted technical specifications prior to purchase. There was no checklist/procedure on the creation of a PDR document which missed critical stakeholders. Additionally TRF stakeholder accepted that the current design will be improved / fixed during the detailed design stage when in fact OPEX should have been incorporated into the PDR. Preliminary design requirements are not governed by any procedure like modification design requirements and requirements are not clear. Human performance trend codes: FD-PAIU-Information Use procedure not used in accordance with established requirements; All actions not performed as written. FD-APQ - Administrative procedures are not available. FD-VA - Not verifying assumptions or justifying the basis for judgement. EP-TD - Time pressure (in a hurry)	28149930				Initiator contacted for input.		Y		Y

SCR #	SCR Date	Status	SCR_Age	Title	Disc Date	Eq Fail	Event Date	Location	Unit	Cond. Descr	Action Taken	Recommended Resolution
D-2019-18140	2019/10/21	COMPLETE	526	Project 16-31555, MEC 88528: DEC 136717 DCC Computer Patches Require Revision Due to Findings During Installation Planning Phase	2019/10/11	N	2019/10/11		0	DCC patches were prepared to support HWMB-WA Stack Monitoring. New I/O was to appear on the Common Process computer for stack monitoring. After DEC 136717 R000 approval, during the installation planning phase, errors were found in the display changes. A display link led to an incorrect display, and erroneous values were shown on a graphical trend and a bar chart (incorrect ranges for new I/O). Teams were working to tight deadlines for several projects at the time.	The DCC design group was informed of the issue. Section Manager notified. SCR created. Condition was verified and patches were revised, retested and submitted for integration testing. Individuals involved were coached on the requirement to consider all interfaces during testing, attention to detail and discuss test plans and results with mentors before signing off as complete.	During weekly section meeting, Section Manager to reinforce that production pressures should not compromise the quality and thoroughness of unit and integration testing practices. Discuss with Section Manager the time pressure if insufficient time available to complete the task. As junior staff are involved ensure mentors are requested to review results of the software activities. ENGELAGB 2019/10/28 07:48 : Section Manager and Senior Staff will provide in house training to jr staff on how to properly submit a software patch for integration testing to ensure all requirements are complete. This will be refresher training.
D-2018-18435	2018/08/28	CLOSED	945	Configuration discrepancies identified during the HWMS Computers Startup. Project #16-31555	2018/08/24	N	2018/08/24		TRF/HW	Findings during the HWMS Computers startup The following discrepancies were identified during the HWMS Computers Startup: 1) the EEPROM Firmware version of the IOBs in the field is different than the versions mentioned in the SRN (NK38-SPEC-69891-10009 [illegible]). 2) [illegible]	Notified the Plant Computers Section Manager. For Item 2: IOB Software was upgraded for the A-Input board to version 030010.	CHOWED 2018/08/28 17:53 : The apparent cause is as follows: The SRN and qualification report were prepared based on the vendor recommended minimum versions with the expectation that the version will be confirmed during installation and any differences would be documented and resolved. [illegible]
D-2016-09679	2016/04/15	CLOSED	1810	D2O Project 16-31555 Food found inside PA - Adverse Trend	2016/04/15	N	2016/04/15		0	A whole banana was found inside a 6" HSS structural member as part of the temporary wiring canopy SE corner of the D2O containment dyke above grade	This self reporting SCR was generated to document this incident/issue	DUNCANE 2016/04/15 11:18 : Contractor investigation initiated , the origin of or who placed the food item is presently undetermined. [illegible]
D-2014-27741	2014/10/02	CLOSED	2371	16-31555 - HWMB West Annex Project - DEC 122212 Concerns over config of O2 piping was installed on West wall of HWMB	2014/08/25	N	2014/08/28	West side of HWMB @ DNGS	TRF/HW	While performing a walkdown of the installed and in service Oxygen Tank piping to the TRF per DEC 122212, it was noticed that in two locations on the west side of the HWMB, there is a horizontal run of pipe that is located very close to the finished grade elevation (~3cm below). [illegible]	Investigation was initiated to determine the extent of the issue (i.e. code violation, safety concerns, etc.). Constructor was contacted to place barriers and signage as appropriate to ensure the piping cannot be damaged. This SCR was initiated as soon as the extent of the condition was completed.	Discuss preferred solutions with OPG and implement the preferred solution. [illegible]
D-2014-16367	2014/05/22	CLOSED	2504	PROJ 16-31555, Excavation revealed pervasive o/s valve (broken), not shown on available drawings.	2014/04/29	N	2014/04/29	East of Inact. Liquid Storage Bld. 9856N, 9976E	0	Drawing NK38-D1Y-10200-1332 indicates that the 2" tie-in location for domestic water is capped. As found field condition revealed an unlagged curb stop valve at the location. The valve was corroded and casing was broken upon discovery. The discovery took place during excavation that took place as part of construction activity for EC 121835 - Construction Water (TMCB) for D2O West Annex construction needs.	Work on EC121835 has stopped at that location. Pipe measurements were taken to confirm it is a 2" water line.	In order to continue with EC installation, the curve needs to be removed, so that the construction water tie-in can take place upstream from the valve. Since the EC 121835 is a TMOD, is it recommended that after TMOD removal, line is to be recapped without this valve, which is how the water line as expected to be found per current drawings.
D-2014-05679	2014/02/20	CLOSED	2595	16-31555, Legacy Configuration Discrepancy found for wiring of 0-67555-PS1 on Vendor-Supplied TRF Argon Bulk Storage Unit.	2014/02/19	N	2000/01/01		TRF/HW	While preparing to temporarily remove 0-67555-PS1 for purging of relocated argon supply piping under WPL for EC122210, the as-found configuration of PS1 wire termination was found to be in conflict with with plan reference design documentation (NK38-D23-67555-0001 Rev 3 and OLW). As found condition was as follows: Blue wire (0-7555-9001) was to be terminated on Terminal #3 but was found terminated to Terminal #2 White wire (0-7555-9002) was to be terminated on Terminal #1 but was found terminated on Terminal #3 As this equipment has been in service since approximately year 2000 with no related system failures reported, the as-found condition is considered to be correct. Note: 0-67555-PS1 is not affected by EC 122210, and is outside of EC scope.	1. Stopped work and initiated EPC vendor NCR process. Black & McDonald NCR-2014-NCR-207 was generated to record as-found condition and to propose disposition. [illegible]	1) It is recommended that affected design documents/data (NK38-D23-67555-0001 and OLW) be updated by document owners to reflect as-found field condition, as appropriate, via OPG DCR process. [illegible]
D-2013-23233	2013/12/06	CLOSED	2671	Proj#16-31555 - DEC 120448 - Line location discrepancy between design flow diagrams and operations flowsheet	2013/12/05	N	2013/12/05		TRF/HW	While marking up Operations flow sheet NK38-FEX-38060-0501-02 to reflect the changes made to Flow diagram NK38-F0D-38060-0202 under DEC 120448, it was discovered that the locations of lines 38HS-L298-3/4HTE and 38SH-L1730-1/2AND as show on the 2 drawings do not agree. Each drawing shows a different line being upstream of the other.	Initiated this SCR.	Walk down equipment in the field to determine which document is in error and subsequently correct the incorrect documentation. READJ 2013/12/12 08:38 : Upon discussions with TRF SRE, recommend C3 NFE for TRF Engineering to walk down and validate the configuration management issue and the DCR if required.
D-2013-19665	2013/10/28	CLOSED	2710	PROJ 16-31555, EC122212, Discovery of Configuration Management Issue of TRF Oxygen Distribution Line Caps (1/2/3/4-75510-L711)	2013/10/10	N	2013/10/10		014	NK38-PFX-75510-0001, R007 (TRF Oxygen Supply, operation flowsheet) shows 1/2/3/4-75510-L711 to units 1 to 4 annulus gas system (AGS, SCI 34000) are capped downstream of 1/2/3/4-75510-V855 (Unit 1,2), while NK38-F1H-75510-10001, R003 (TRF Oxygen Supply, flow diagram) indicates these lines still supply oxygen to units 1 to 4 AGS. In addition, NK38-F1H-75510-10001, R003 shows 1/2/3/4-75510-V851 & V855 are open. Discussion with AGS system engineer and review of AGS documents indicate that AGS oxygen are supplied via oxygen bottles and do not receive oxygen from TRF oxygen distribution.	Field walkdown was performed and found that: 1/2/3/4-75510-L711 are capped in Rm 121 for all 4 units Valves 1/2/3/4-75510-V851, V854, V855 are closed	NK38-F1H-75510-0001, R003 needs to be updated to reflect the actual field setup to resolve this configuration management issue. READJ 2013/10/31 14:18 : Legacy configuration management issue. Recommend C3 NFE for plant design to resolve configuration management issue.
D-2013-11442	2013/06/27	CLOSED	2772	PROJ 16-31555, D2O Foundation Wall Design Calculation	2013/06/15	N	1990/01/01		TRF/HW	During our review of the existing D2O Building wall at the pipe chase interface, we identified unconservative assumptions in the original analysis. The resulting existing design has a safety margin less than the design basis when utilizing these conservative assumptions. From our initial review with a more detailed analysis, the required safety margin appears to be satisfied. Calculation NK38-CALC-D09700017 for the D2O Management Building Substructure, completed March 20, 1987, was reviewed to evaluate potential structural modifications to the western wall (along Column Line D/C), between Column Lines D4 and D7) of the D2O Management Building Substructure as part of the design of pipe chase for connection to the D2O Management Building West Annex. [illegible] ... Description continued in next section due to character count limit.	... cont of Condition Description Using the same analysis procedure as the original calculation, the moment on the inside face of the wall would be 1682 kilonewton-meters per meter (kNm/m). [illegible] Immediate Action outlined in "Recommended Actions" ...due to character count limit)	Immediate Action Taken: 1) A cursory review of the wall design in this area using alternative methods was performed to more accurately evaluate loads on the wall. [illegible] Recommended Actions to Resolve: 1) Complete and issue supplementary calculation for existing D2O Foundation Wall under existing loading conditions to determine the true analysis proven adequacy. 2) Review the rest of this calculation to determine if the same analysis process described above was used for the rest of the foundation wall design, and determine whether the issues described above may be relevant in other areas of the foundation wall. 3) Begin inspecting the inside face of wall above elevation 94.0m and between column lines D4 and D7 to check for the presence of horizontal cracks that could indicate structural inadequacy. 4) Begin inspecting the top of the foundation wall to look for shear cracks that could indicate structural inadequacy. 5) Inspections for bending and shear cracks should also be considered for the rest of the dike building that may have the same design issues described above.
D-2013-06554	2013/06/27	CLOSED	2777	16-31555 Configuration Management issue regarding dimensions of SG Fuel Tank 0-77200-TK1&2 Berm	2013/06/24	N	2013/06/24		TRF/HW	Configuration management error discovered for the SG Fuel Tank (0-77200-TK1&TK2) Berm which may impact on construction and use of the future HWMB West Annex structure. The bottom of the berm at finished grade has been identified to be further east in the field than shown in design documentation. Drawing NK38-D0H-27722-1001 shows the center line of the storage tank on the drawing is at 10003.50 E, the center line of the berm top is at 10018.00 E and that the bottom of the berm at finished grade is 10024.50 E. A field survey identified that the bottom of the berm at finished grade extends between 1.20 m and 2.14 m further east than documented. Condition was discovered while performing a survey to verify the location of the existing HWMB and the adjacent Berms. Survey was conducted in preparation for design and construction of the Heavy Water Management Building West Annex.	Filed this SCR	The impact of the berm's existing dimensions on the proposed TRF West Annex should be evaluated. If the berm impedes on the ability of the West Annex to meet its design requirements, retaining the berm to its documented dimensions or altering design requirements should be considered by the project. READJ 2013/06/27 : C3-NFE due to legacy configuration issue. If assessment determines that this will impact the D2O project, the D2O project will address the gap.
D-2013-02405	2013/03/03	CLOSED	2777	16-31555 Design Package Rejection	2013/03/01	N	2013/03/01	GM Building	0	Submitted Design Package for OPG Acceptance was incomplete and requires significant rework. Reasons included: Calculations for RV sizing not provided, Assessment of the impact the new load will have on the existing system not provided, new piping materials and added recovery invalidate the conclusions of the reconciliation statement, and numerous other errors and omissions in the design package which was provided to the project team on a Comment and Disposition Sheet.	Notified the Project Team that the design package had been rejected and included the comment and disposition sheet to justify the basis for rejection. Filed SCR	Recommended C3-NFE, Supply Chain to initiate Vendor CAR
D-2013-00602	2013/01/25	CLOSED	2777	Discrepancy in dimensions of Heavy Water Management System Building between drawings	2013/01/21	N	2013/01/21		0	On drawing NK38-D0H-20110-0001 - Buildings and Structures Column Line Grid Key Plan, the HW Management System Structure has a dimension of 53,000 mm between grid line 'DA' and 'TM'. This dimension is in disagreement with NK38-D5A-23800-0003 - D2O Management Bldg. Plan at El. 100.000m, which says the dimension is 52,000 mm. Discrepancy was discovered while creating change paper on NK38-D0H-20110-0001 for DEC 120353 under MEC 110880 for the HWMB West Annex Project (Proj#16-31555).	Initiated this SCR	It is recommended that the dimension on NK38-D0H-20110-0001 - Buildings and Structures Column Line Grid Key Plan be corrected from 53,000 mm to 52,000 mm between grid lines 'DA' and 'TM' to avoid any errors on future projects. The 52,000mm dimension is assumed to be correct as it is from an architectural drawing which has more detailed dimensions. SOLANKIR 2013/01/28 : C4 for tending
D-2013-00395	2013/01/14	CLOSED	2776	Operational Flow Sheet missing load designations	2013/01/14	N	2013/01/14	Documentation only	0	As part of the D2O Heavy Water Management Building West Annex Project (16-31555), the Standby Generator cable duct bank needs to be relocated. During the documentation review, it was noted that the Operational Flowsheet NK38-FXX-56000-0511-R001 does not show the fuel tank berm sump pump receptacles on panel 0-56241-RP3413 breakers CB5 & 7. NK38-D1S-56000-0093 shows these breakers as described here and they have been seen in the field.	Initiate this SCR	Update flowsheet to show connections SHERBLTJ 2013/01/16 : FLM/Manager needs to be corrected
N-2012-04396	09/07/2012 03:56 PM	CLOSED		Eng Quality Surveillance at RCMT identified issues related to their staff training and qualifications	08/29/2012	N	08/29/2012			Quality Engineering surveillance at RCMT on August 29, 2012 identified the following issues: (1) Position Requirements for those filling the roles of MTL, DTL, and Designer for the project does not list any requirement of Engineering Qualifications. [illegible]	Briefed the RCMT Management, and OPGN Refurbishment Engineering Management. [illegible]	(i) Review applicable OPGN governing documents that discuss vendor staff qualification requirements for those taking up roles such as DTL, MTL and Designers to make sure that training and qualifications are clearly identified and are adequate for the roles they perform. [illegible]
N-2012-09404	12/19/2012 03:46 PM	CLOSED		Difficulty in Arranging Walkdown	12/14/2012	N	12/14/2012	GM Building	REFURB - Common	To progress tasks for Refurbishment, a walkdown was arranged for Friday, December 14 of the MCR while D Crew would be on shift. This walkdown was selected for this date because of familiarity with the crew and the CRSS. [illegible]	Acknowledgement that the process was recently developed and could be further improved was made by both OPG and Vendor staff. [illegible]	1. Review current process requirements and streamline where possible. 2. Reinforce expectations for the role of Vendor Supervisor with respect to PJBs and completion of any associated forms to reduce the number of parties involved in the process. 3. Provide instructions to vendors on governance protocol for arranging TLDs to reduce confusion on OPG's process. [illegible]
D-2013-00972	01/18/2013 03:54 PM	COMPLETE		Design deficiencies in Asset Suite (Passport)	01/16/2013	N	01/16/2013			During the I&C design activities associated with HWMB West Annex, the following recurring design related information has been identified for SCR 89899 and 89900: 1) The digital level indicators 0-63850-LI6#2, LI#48 and LI7#2 are shown on logic diagram NK38-LCM-63850-00060009 but they do not exist in Passport. [illegible]	Informed supervisor and initiated this SCR.	The above deficiencies require resolution by the appropriate engineering groups (i.e. Plant Design and Procurement Engineering etc). SOLANKIR 2013/01/17 Recommending [redacted] Plant Design to accept this as C 3 NFE, apparent cause: Configuration deficiency.
N-2013-17054	10/11/2013 03:54 PM	COMPLETE		Quality Issue: Incorrect SCI #s used for electrical systems in MDR NK38-MDR-38000-10003 and subsequent ECs	10/01/2013	N	05/17/2013	GM Building	REFURB - Common	Electrical Systems SCI numbers used in MDR NK38-MDR-38000-10003 are station electrical power system SCI numbers. [illegible]	Informed to Section Manger and initiated this SCR	Follow N-PROC-AS-0041 and obtain new SCIs. Update all affected documents of ECs. [illegible]
D-2013-18217	10/22/2013 03:54 PM	COMPLETE		EPC/MSA Breakthrough event: Unsafe non-compliant design installed in the field	10/22/2013	N	10/22/2013	Darlington NGS	0 - COMMON TO SITE	During a field walkdown, the breakthrough design event identified in SCR D-2013-17008 was found to have been installed in the field (not in service at the current date). All design concerns identified in D-2013-17008 as design issues are now field installed issues. (1) Unsafe grating: the opening cut into the grating did not include the mandatory banding to reinforce the cut edges to safely transfer the load around the cut-out. [illegible]	Initiated this SCR. Notified OPG project lead of the unsafe field condition. Notified FLM.	Address the issue at the design level to prevent unsafe field conditions. [illegible]
D-2013-20368	11/06/2013 03:57 PM	COMPLETE		TRF: Temporary Terminal Point Operation	11/06/2013	N	09/16/2013	TRF: Argon Tank Relocation EC# 122210	TRF/HW - TRF/D2O BUILDING	0-75550-V17 required a Temporary Terminal Point identification to support the Argon Tank relocation as per EC# 122210. [illegible]	Informed Ops Project Support FSOS that the TCRR was not in effect	Review N-PROC-MA-0012 section 2.2, determine if the Temporary Terminal Point procedure (2.2.5) was followed correctly. JONESJA 2013/11/11 17:26 : C3-NFE with actions to present learnings to station as HuLL.

SCR #	Initiator	Other Person Involved	Initiator Org	FLM	Initiating Mgr	Cat	Fire	Safety	Reportable	Affects Oper	Re Work	PM	Different Reportability	TOE Reqd	TOE Status	Diff Oper Than Initial	Diff Res Than Initial	Diff Sig Than Initial	EO Mgr	Evaluators	Eval Org	TrendingOrgs	CA Plan Due Dt	CA Plan Completion Dt	CAP Due Dt	EO Eff Rvw	Coordinator	Coordinator Comments	Vend Rel	Vend CAP/NCR	Vendors	Ext WANO	Ext COG	Ext NA	Int FW	Int NA	Days At MRM	SCR Reviewed	MRM Review Dt	MRM Comments	Line Management Codes	StationReworkERA	EquipmentFailure	ER Program	Failed Eqpt Type
D-2019-18140	Hogg, Jenell		N-ESCCDM	Engelage, Bryon	Rogalski, David	C3-NFE	N	N	N	N	N	N	Rogalski, David					BROTHERR 10/30/2019 01:52 PM : As per screening chair C3 NFE - cause documented. Actions required to address the cause. Apparent Cause is: Inadequate Training Methods.		Rogalski, David	Bryon Engelage [redacted]	N-ESCCDM	N-ESCCDM	11/14/2019	11/14/2019	2019/11/14	N	Brothers, Ray		N			N	N	Y	N	Y	2		10/30/2019						
D-2018-18435	Popescu, Ovidiu	Harry Blundell	N-ESCCDM	Chow, Edmond	Rogalski, David	C3-NFE	N	N	N	N	N	N	Rogalski, David					HAOL 2018/08/29 16:53 : NFE - cause documented. Actions required to address the cause. Apparent Cause is: The apparent cause is as follows: The SRN and qualification report were prepared based on the vendor recommended minimum versions with the expectation that the version will be confirmed during installation and any differences would be documented and resolved. CAP will be completed as part of C3 NFE.		Rogalski, David	Edmond Chow [redacted]	N-ESCCDM	N-ESCCDM	9/13/2018	9/13/2018	2018/09/13	N	Hao, Lisa		N			N	N	Y	N	Y	1		8/29/2018		ECC-AFS				
D-2016-09679	PHILP, ROBERT	Aecon Industrial	N-PMFRDM	DUNCAN, ERIC	Kennedy, Patrick	C3	N	N	N	N	N	N	Kennedy, Patrick					TOPOLNAL 2016/04/21 14:19 : C3 ace required to determine failed barriers and corrective actions to address due to multiple issues of this nature on this project; see closed out scrs		Kennedy, Patrick	ALEXANDER TOPOLNIKOV [redacted] Tony Fan	N-PMFDR	N-PMFDRM, N-PMFDR	5/21/2016	5/20/2016	2016/06/24	N			Service		[illegible]	N	N	Y	N	Y	5		6/23/2016		CON-N/A-SAF, CON-PI-NF				
D-2014-27741	TITSCH, STEPHEN		N-PMIPDRM	Read, Julian	Colella, Anthony	C3-NFE	N	N	N	N	N	N	Colella, Anthony					RAZVIP 2014/10/21 10:11 : Apparent cause is LTA validation of assumptions (design) did not validate assumptions related to configuration of subgrade footings.		Colella, Anthony	Paul Razvi [redacted]	N-PMIPDRM	N-PMIPDRM, N-PMIPDRM, N-PMIPDM	11/5/2014	11/5/2014	2014/11/05		Razvi, Paul		Both		RCMTECHNOLOG, BLACKMCDONAL	N	N	Y	N	Y	9		10/21/2014		CON-PI-ENG, CON-PI-NF				
D-2014-16367	GOSPODINOV, YEVGENIY		N-PMIPDRM	Read, Julian	Colella, Anthony	C3-NFE	N	N	N	N	N	N	Colella, Anthony					RAZVIP 2014/05/29 13:36 : NFE - cause documented. Actions required to address the cause. Apparent Cause is: legacy configuration mismatch issue (field as-found condition during excavation does not match design drawings).		Colella, Anthony	Paul Razvi [redacted]	N-PMIPDRM	N-PMIPDRM, N-PMIPDRM	6/13/2014	6/3/2014	2014/06/13	N	Razvi, Paul		Service		BLACKMCDONAL	N	N	Y	N	Y	6		5/28/2014						
D-2014-05679	MACK, DAN		N-PMIPDM	Read, Julian	Colella, Anthony	C3-NFE	N	N	N	N	N	N	Colella, Anthony					RAZVIP 2014/02/25 12:31 : NFE - cause documented. Actions required to address the cause. Apparent Cause is: legacy configuration management design issue.	RAZVIP 2014/02/25 12:31 : C3 NFE per Julian Read	Colella, Anthony	Paul Razvi [redacted] Julian Read [redacted]	N-PMIPDM	N-PMIPDM, N-PMIPDM	3/12/2014	3/5/2014	2014/03/12	N	Razvi, Paul		Service		BLACKMCDONAL, RCMTECHNOLOG	N	N	Y	N	Y	0		2/25/2014						
D-2013-23233	TITSCH, STEPHEN		P-PMIPDRM	Read, Julian	Popovic, Dragan	C3-NFE	N	N	N	N	N	N	Popovic, Dragan					KENNEDYR 2013/12/12 11:29 : NFE - cause documented. Actions required to address the cause. Apparent Cause is: CF-B2		Hanoffen, Kenneth	Thomas Wong [redacted]	D-OMCTRFW4	P-PMIPDRM, D-OMCTRFW4	1/10/2014	12/12/2013	2014/01/10	N	Kennedy, Rick		Service		RCMTECH	N	N	Y	N	Y	0		12/12/2013						
D-2013-19665	CHEN, JOSEPHINE		N-PMFPM	Read, Julian	Popovic, Dragan	C3-NFE	N	N	N	N	N	N	Popovic, Dragan					FORM 2013/11/07 15:38 : NFE - cause documented. Actions required to address the cause. Apparent Cause is: CF-B2		Popovic, Dragan	Paul Razvi [redacted]	N-PMFPM	N-PMFPM	11/22/2013	11/18/2013	2013/11/22	N	Razvi, Paul		Service		RCMTECHNOLOG	N	N	Y	N	Y	7		11/1/2013	FORM 2013/11/07 15:38 - C3 NFE as per DM Chair					
D-2013-11442	BROCK, JOHN		N-PDM	Waugh, Chris	SHERBLT, JEFF	C3-NFE	N	N	N	N	N	N	SHERBLT, JEFF					No further Evaluation is required, cause is known and documented. CF-M2 Design		Kar, Arun	[illegible]	N-NRDEM	N-PDM, N-NRDEM	9/28/2013	10/28/2013	2013/10/28	N			N			N	N	Y	N	Y	6		8/15/2013	STARRS 2013/08/13 08:44 : As per FAC changed EO from Sherbilt to Kar					
D-2013-06554	TITSCH, STEPHEN		N-PDM	Read, Julian	SOLANKI, RAMESH	C3-NFE	N	N	N	N	N	N	SOLANKI, RAMESH					NFE - cause documented. Actions required to address the cause. Apparent Cause is: Configuration Management Issue.		SOLANKI, RAMESH	[illegible] [redacted]	N-PMIPDM	N-PDM, N-PMIPDM	7/17/2013	7/12/2013	2013/07/17				Service		RCMTECH, BLACKMCDONAL	N	N	Y	N	N	5		7/2/2013						
D-2013-02405	Krystolovich, Brian		N-NRDEM	DE VAAL, CHRIS	Harris, Stuart	C3-NFE	N	N	N	N	N	N	Harris, Stuart					Cause known: staffing and resources inadequate to ensure required product quality	MATHEWK 2013/03/05 Not significant by itself but has potential	Harris, Stuart	CHRIS DE VAAL [redacted] Brian Krystolovich [redacted]	N-NRDEM	N-NRDEM	3/26/2013	3/25/2013	2013/03/26	N			Service		RCMTECHNOLOG, RCMTECHNOLOG	N	N	Y	N	N	6		3/11/2013		CON-ENG-NR				
D-2013-00602	TITSCH, STEPHEN		N-NRDEM	SOLANKI, RAMESH	SHERBLT, JEFF	C3-NFE	N	N	N	N	N	N	Popovic, Dragan					Apparent Cause known: Legacy documentation issue. Action being taken by DNGS Plant Design. CF-B2 tech doc needs upgrade	MATHEWK 2013/02/01 A minor condition (legacy documentation issue), any action in addition to correcting this document to be based on trend analysis. FORM 2013/02/04 : As per Screening Meeting.	Cvitkovic, Tom	[illegible] [redacted] [illegible] [redacted]	D-PDDM	N-NRDEM, N-PMFPM, D-PDDM	2/15/2013	2/6/2013	2013/02/15	N			Service		RCMENGSERVIC	N	N	Y	N	N	[illegible]		2/4/2013						
D-2013-00395	Chandler, Robert	WITTSJ 2013/01/23 Ramesh Solanki; KC Wallace	N-NRDEM	SOLANKI, RAMESH	SOLANKI, RAMESH	C3-NFE	N	N	N	N	N	N	Cvitkovic, Tom					NFE - cause documented. Actions required to address the cause. Apparent Cause is: CF-M2 Design.		MURTHY, Kanwaz	Jamal Shah [redacted] Kanwaz MURTHY [redacted]	D-PDDM	D-PDDM	2/7/2013	2/7/2013	2013/02/07	N	Wittz, Jeff	1/24/2013 J. Wong is initiating and Trending organization corrected to N-NRDEM	N			N	N	Y	N	Y	1		1/23/2013	STARRS 2013/01/24 As per e-mail request, changed EO from Cvitkovic to Murthy.					
N-2012-04396	MATHEW [redacted]		N-NRPECSM	TAWFIK [redacted]	FACTZOLD [redacted]	C 3	N	N	N	N	N	N	HORST FACTZOLD							HORST FACTZOLD	LANE TAWFIK	N-NRPECSM	N-NRPECSM	10/9/2012	9/28/2012	2012/10/9		Eng # MATHEW		Service		RCMENGSERVIC	N	N	Y	N	N			9/11/2012		INF PROC NR TRNG 2 NR TRNG 4 NR				
N-2012-09404	CEMONI [redacted]		N-NRDEM	[illegible] [redacted]	HARRIS [redacted]	C 3	N	N	N	N	N	N	Stuart Harris							Stuart Harris	Richard Olesa	N-NRDEM	N-NRDEM	2/8/2013	1/30/2013	2013/2/8	N	Eng # MATHEW		Service		WORPARSONS	N	N	Y	N	N			12/26/2012		INF PROC INF PROC NC INF PROC NR Roles Unclear				
D-2013-00972	[illegible] [redacted]		N-NRDEM	SOLANKI [redacted]	SHERBLT [redacted]	C 3	N	N	N	N	N	N	JEFF SHERBLT							[illegible]	Kanwaz MURTHY	D-PDDM	N-NRDEM, D-PDDM	2/8/2013	2/7/2013	2013/2/8	N	Jason Wong	1/24/2013 J. Wong: In discussion with SCR co-ordinator for Refurb. SCR D-2013-00972 should belong to Refurb and not Projects Design. Once the SCR is copied over to the NOSS database, this SCR can be dispositioned as a Non-Event. [illegible]	N			N	N	Y	N	Y			1/25/2013	STARRS 2013/01/24 As per e-mail request, changed EO from Cvitkovic to Murthy.					
N-2013-17054	[illegible] [redacted]		N-NRDEM	[illegible] [redacted]	COULAS [redacted]	C 3	N	N	N	N	N	N	Stuart Harris							Stuart Harris	Richard Olesa	N-NRDEM	N-NRDEM	2/8/2013	1/30/2013	2013/2/8	N	Eng # MATHEW		Service		WORPARSONS	N	N	Y	N	N			12/26/2012		INF PROC INF PROC NC INF PROC NR Roles Unclear				
D-2013-18217	[illegible] [redacted]		D-PDDM	[illegible] [redacted]	TOWNSEND [redacted]	C 3	N	N	N	Y	N	N	Dean TOWNSEND	CNSC						[illegible]	[illegible]	N-NRDEM	D-PDDM, N-NRDEM	11/25/2013	1/21/2014	11/25/2013	N	[illegible]		Service		BLACKMCDONAL, RCMTECH	N	N	Y	N	Y			10/28/2013						
D-2013-20368	MARTIN [redacted]		D-OMCTRFW4	JONES [redacted]	HAMILTON [redacted]	C 3	N	N	N	N	N	N	Kenneth Hamilton							Kenneth Hamilton	James Jones	D-OMCTRFW4	D-OMCTRFW4	11/27/2013	11/15/2013	11/27/2013	N	Rick Kennedy		N			N	N	Y	N	Y			11/12/2013						

SCR #	Discussion of Facts	Conclusions	Previous Similar Condition	Analysis Methodology	Action Reqd	Addl Action Reqd	ACE	Constructor Disposition	Discussion With Initiator	Event #	Indicator Req	% Power	HasAttachments
D-2019-18140	N/A	N/A	N/A	N/A	28227985								N
D-2018-18435	Problem Statement: There are two separate issues in this SCR. Both issues were found during the HWMS (Heavy Water Management Systems) Computers startup. Issue one is the EEPROM Firmware versions of the IOBs in the field was found to be different than the version mentioned in the Software Release Notice (SRN)(NK38-SPEC-69891-10009). [illegible] Interim Actions: Upon discovery of issue one, the EEPROM Firmware versions of all the IOBs in the field were checked and found to all be the same version. [illegible]	Apparent cause: Item one: The SRN change paper and Qualification Report were prepared based on the vendor recommended minimum versions with the expectation that the version would be confirmed during installation and any differences would be documented and resolved. However, the work plan step to confirm the software versions was checked off, indicating successful completion, even though the IOB EEPROM Firmware versions were not as expected. This step was either not performed completely or done improperly. As a result of this, the SRN was issued with the incorrect version, and the Qualification Report was not revised to correct the version. Existing SCRs D-2014-15184 and S-2014-00485 document issues around the improper execution of this work plan. Expectations on executions of Installation and Commissioning Work Plan Instructions was re-emphasized as part of the Darlington SCR as per AR 28167978-03. No additional recurrence control action is required as part of this SCR since the root cause is the same as D-2014-15184 and has already been addressed. Item two: The preparer and reviewers of the workplan were unaware of the need to check the software version of the IOB. Reviewing the Design Scoping Checklist of Master EC 118880, equipment with embedded software was identified as part of this modification. However, the ref docs of Design EC 120483 does not include completed N-FORM-10408 and N-FORM-10409 as per N-PROC-MP-0049. The Design Scoping Checklist for Master EC 118880 is based on R010 of the form. The latest revision of the checklist, R018, includes a step to add an item to the Issue Tracking File (ITF) so the proper procurement process is followed. No additional recurrence control action is required since the updated Design Scoping Checklist now triggers an ITF item which would have been reviewed for applicability before the Design EC is approved. Causal Factor: * CF-R: Human Performance-Organizational Processes and Values Based on the above, the other HDCU SR6.0 SP3 software and firmware versions listed in step 7.3.2 of work plan NK38-WPL-69891-2580963 should be checked to ensure no other deviations are found. Consequence of Adverse Condition: For item one, at this time it is not completely known if there are any consequences from using an older version of the IOB EEPROM Firmware than the recommended minimum. The installed IOBs have been functioning properly with the HDCU SR6.0 SP3 software since installation in December 2013. The vendor has been contacted for support. To-date there have been no observed adverse consequences since installation in December 2013. For item two, the software is now the correct version so no additional corrective actions are required. Prior to updating to the correct version, no issues were observed.	SCR Search: A search for SCRs where software versions are incorrect found the following: * P-2011-07605: CS APS : WRONG FIRMWARE REVISION IN CTG2 AVR * N-2018-09320: DRU2 PIDS PI Server Windows services not found as expected during commissioning of Design EC 131802 As discussed above, SCRs D-2014-15184 and S-2014-00485 are also relevant to this specific condition.	C3 NFE - No ACE is required	28215792								N
D-2016-09679	Problem Statement: From 13-Apr-2016 to 15-Apr-2016, there were 3 Human Performance Events related to food consumption in the Protected Area (PA). On 13-Apr-2016 on the D2O Project 16-31555 SCR D-2016-09383: A worker was consuming Hard candy in PA, that resulted in a stand down of the worker with performance management actions being taken on the individual. On 15-Apr-2016 on the D2O Project 16-31555, SCR D-2016-09679 was initiated. A whole banana was found inside a 6" HSS structural member as part of the temporary wiring canopy SE corner of the D2O containment dyke above grade. Associated think of the events: is, that process barriers developed to ensure Food and Beverages not being permitted inside Zones 2, 3, and unzoned areas except in the approved locations of approved paths, to approved locations (as required by N-PROC-RA-0014: Radiological Zoning, Personnel/Material Monitoring and Transfer Permits) were not implemented. Consequence is: such events constitute a Radiological Protection (RP) violation by increasing the potential risk of harm to personnel. [illegible] Critical Facts and Data: SCR D-2016-09383: The noncompliance was discovered during supervision where a worker was observed consuming hard candy in the work area. Immediate Action(s)Taken: CMO was informed and the worker was stood down. Performance management actions taken included putting Orange badge for the individual with a face to face meeting with CMO management & Station RP manager on the return to the site of the tradesman. Interim Action(s)taken: Contractor was requested to generate a HuLL. HuLL was not presented due to SCR D-2016-09383 being closed to D-2016-09679 Refurbishment Managers Briefing Card issued May 06, 2016. SCR D-2016-09679: The noncompliance with RP procedure was discovered while performing a site walk down and review of work progress and self-reported by the contractor. Immediate Action(s)Taken: Contractor contacted OPG Contract Administrator, Contractor Supervisor, Contractor Project Manager and initiated investigations. The origin of or who placed the food item is presently undetermined in spite of repeated requests to the contractor's work groups. Interim Action(s)taken: i) Contractor was requested to generate a HuLL. ii) Work suspended and complete crew stand down 15 Apr16 for ergo back for a presentation supported by FLM 870 RP and additional direction was given by station management across all CS WSA / RP ... [illegible]	Apparent cause is CF-R Human Performance- Organizational Process and Values. Failed Barrier: What: Procedural non- compliance to N-PROC-RA-0014: Radiological Zoning Personnel\material Monitoring And Transfer Permits. How: Lack of supervisory oversight in communicating & reinforcing Rad. Protection (RP) Fundamental procedure due to inadequate supervision in reinforcing and Rad. Protection (RP) Fundamentals & fully identifying potential risk of internal contamination to all work groups through updated PJB. Why the barrier failed: i) Failure to adhere to procedure N-PROC-RA-0014: Radiological Zoning Personnel\material Monitoring And Transfer Permits. Other contributing factors: ii) Lack of supervisory oversight to reinforce fundamentals of CORE 4 Error Prevention Tools. iii) Expectations of Food and beverages not being permitted inside Zones 2, 3, & unzoned areas except in the approved locations (N-PROC-RA-0014) were not presented/rolled out to all Work Groups (Migrant Trades). iv) Breaks for Migrant Trades to be taken at the work face. v) Orange Badge Training (QUAL 35845): Personnel and supervisors for the Contractors Work Groups (Migrant Trades) are new to Nuclear. Personnel and supervisors have been on site < 12 month. Site procedures take time to internalize. vi) Updated PJB did not include OPEX from SCRs. OPEX from HuLL was not shared with the Work Groups. PJB failed to communicate/present OPEX to identify gaps stated in SCRs Consequence: Rad. Protection (RP) Fundamentals process and procedures were not followed. Failure to implement OPG procedures.	Site SCR Databases used to Search Previous Similar Events: A search of SCR data base was performed using each of the following key words to search separately: " Chewing"," Candy", "Food", "Drink", "Beverage", "Gum", "Consume" for each of the D, N & P SCR data base for previous 8 quarters from 19-Apr-2016. The following results were noted relevant to the scope of this ACE: D-2015-03629 (D4), D-2015-07819(D4), D-2015-1105 (D4), D-2015-18740 (D4), D-2015-2674 (D4), D-2015-25727 (D4), D-2015-25846 (D4), D-2015-29664 (D4), D-2016-00357 (D4), D-2016-00535 (D4), D-2016-04862 (D3), D-2016-07676 (D3), D-2016-08558 (D3), D-2016-08601 (D4), D-2016-08669 (D4), D-2016-009252 (D3), D-2016-09383 (CO), D-2016-9679 (C3), D-2016-09698 (D4), D-2016-10004 (CO), D-2016-10063 (CO), N-2015-09196 (D4), N-2015-18546 (D4), N-2015-19482 (D4), N-2015-22611 (D4), N-2016-00344 (D4), N-2016-02121 (D4), N-2016-08433 (D4), N-2016-09843 (D4), N-2016-09974 (CO), N-2016-11326 (D4), N-2016-11518 (D4), P-2015-05899 (D4), P-2015-07275 (D4), P-2015-09987 (D4), P-2015-17247 (D4), P-2016-02357 (D4), P-2016-04334 (D4) Conclusions: None of the above SCRs for the past 8 quarters have been categorized as C3 (with the exception of the SCR D-2016-9679 for which this CAP is being developed). The majority of them have been assigned category D with significance level 3 or 4 for trending purpose. Four (4) nos SCRs initiated in 2016 were categorised as CO & linked to SCR D-2016-09679 (the SCR for which this CAP is being developed). There is nearly a 150% increase in the number of documented instances for SCRs initiated in each of the (D, N & P) SCR databases between the 1st 4 Quarters versus the last 4 Quarters. This could be contributed to the number of new personnel commencing work with the increase in the activities at DNGS & PNGS in the latter 4 Quarter's. Reasons for Recurrence No similar condition was identified in the last 8 Quarters in the D, N & P SCR database for recurrence within 2 days of the first occurrence on the same project (i.e.: D-2016-09383 on 13-Apr -2016 & D-2016-0967 on 15-Apr-2016 for the D2O Project 16-3155).	Background: The following information was reviewed with interviews conducted prior to performing Barrier Analysis: • Timelines & actions taken for SCRs D-2016-08601, D-2016-09252, D-2016-09383, D-2016-9679; • Vendor's record of PJBs for period 1-Apr-2016 to 30-Apr-2016; • OPG CA/CM Logs and notes on the SCRs; • Review of NGET records of personnel and supervisors. • Search of SCR database for Darlington Nuclear Station (D), NOSS (N) & Pickering Nuclear Station (N) for previous 8 quarters from 19-Apr-2016 for similar gaps. • Interviews were conducted with the SCR initiator, OPG Contract Administrator/Contract Monitor, SCR Co-ordinator. The following were noted: Failure to adhere to procedure N-PROC-RA-0014: Radiological Zoning Personnel\material Monitoring and Transfer Permits. Lack of supervisory oversight to reinforce fundamentals of CORE 4 Error Prevention Tools. Expectations of Food and beverages not being permitted inside Zones 2, 3, & unzoned areas except in the approved locations (N-PROC-RA-0014) were not presented/rolled out to all Work Groups (Migrant Trades). Breaks for Migrant Trades are at the work face with expectations for no food consumption in the PA. Lack of supervisory oversight in communicating & reinforcing Rad. Protection (RP) Fundamentals on risks to all work groups through PJB roll outs after initial noncompliance was identified. The individual was stood down and coached. Updated PJB did not include OPEX from SCR for all Work Groups. Roll out to personnel in PJB for no food or drinks permitted in PA was covered in 1 of 3 work groups on 11, 14 & 20-Apr. Record of roll out was also noted in OPG CMO logs for 8, 11 & 14-Apr. Interviews & discussions confirmed that there were no special conditions/circumstances to accommodate for personal, medical or space availability/convenience for meals during breaks as potential contributing factors and so these factors were discounted. Orange Badge training records of Vendor personnel and supervisors revealed that the training was completed in the past 12 months and supervisors were recently qualified (within the past 12 months). After collating all information an apparent cause evaluation was performed using Barrier Analysis Technique [illegible]	28190285				Initiator contacted for input.				Y
D-2014-27741	While performing a walkdown of the installed and in service Oxygen Tank piping to the TRF per DEC 122212, it was noticed that in two locations on the west side of the HWMB, there is a horizontal run of pipe that is located very close to the finished grade elevation (~3cm below). The piping is located in a construction work area, is still partially excavated and is not accessible. A concern was raised as to whether this design will be acceptable following backfill considering there appears to be a risk for incidental pipe damage once in its final configuration. After investigating, it was determined that the piping was installed per the dimensions on the accepted design change paper and that this design is not in violation of any code requirements, however the horizontal runs are at risk of incidental damage in this configuration. The EC has not completed full installation as the removal of the old Oxygen tank is still outstanding. The oxygen piping has been commissioned, energized and placed in service but has not yet been AFS'd per NK38-CORR-38000-0477584. Risks/ Consequences: Risk of incidental damage to the piping section if left in existing configuration.	The apparent cause is less than adequate (LTA) validation of assumptions related to design configuration of subgrade footings. (C3 NFE - Not required as per N-PROC-RA-0022)	C3 NFE - Not required as per N-PROC-RA-0022	Discussions were held with all parties to obtain facts which led to the conclusions (C3 NFE - Not required as per N-PROC-RA-0022)	28171853				Initiator contacted for input.		Y		N
D-2014-16367	Problem Statement: Legacy configuration discrepancy discovered by EPC contractor. The field as-found condition does not match design drawings. Detailed Discussion of Facts: Project 16-31555 was tying into domestic water system per EC#121835 inside the protected area (west of D2O) for temporary construction water supply for D2O Storage project. Yard services drawing (NK38-D1Y-10200-1332) showed the line to be capped at the point of tie-in; however during excavation, an unlagged broken curb stop valve and curve pipe extension was found. The valve was corroded and casing was broken upon discovery. Design Agency did some research, and found an old drawing (NK38-D2F-66210-0003) which shows that a connection from the project tie-in point existed to old concrete lab, which was supposed to be removed. Risks/ Consequences: Mis-match between field configuration & design drawings may create work protection & testing hazards. It may also create distractions & hazards during maintenance, inspection, and testing activities. Interim Actions Taken: Work on EC121835 has stopped at that location. Pipe measurements were taken to confirm it is a 2" water line.	(C3 NFE -Not required as per N-PROC-RA-0022) The apparent cause is legacy configuration management (mis-match) between physical plant & design drawings.	(C3 NFE -Not required as per N-PROC-RA-0022)	Discussions were held with all parties to obtain facts which led to the conclusions (C3 NFE -Not required as per N-PROC-RA-0022)	28168131				Initiator contacted for input.		Y		Y
D-2014-05679	Problem Statement: Legacy configuration discrepancy discovered by EPC contractor. The field condition does not match Online Wiring (OLW). Detailed Discussion of Facts: While preparing to temporarily remove 0-67555-PS1 for purging of relocated argon supply piping under WPL for EC122210, the as-found configuration of PS1 wire termination was found to be in conflict with plan reference design documentation (NK38-D23-67555-0001 Rev 3 and OLW). As found condition was as follows: Blue wire (0-7555-9001) was to be terminated on Terminal #3 but was found terminated to Terminal #2 White wire (0-7555-9002) was to be terminated on Terminal #1 but was found terminated on Terminal #3 As this equipment has been in service since approximately year 2000 with no related system failures reported, the as-found condition is considered to be correct Note: 0-67555-PS1 is not affected by EC-122210, and is outside of EC scope. Risks/ Consequences: Mis-match between field configuration & OLW may create work protection & testing hazards. It may also create distractions & hazards during maintenance, inspection, and testing activities.	The apparent cause is legacy configuration management (mis-match) between physical plant & OLW. (C3 NFE -Not required as per N-PROC-RA-0022)	(C3 NFE -Not required as per N-PROC-RA-0022) An OPEX search was performed using Power Search. There have been other SCRs of Design Drawings not being identical to the field but there has been no adverse trend and the issues were typically resolved via the DCR process.	(C3 NFE -Not required as per N-PROC-RA-0022) Discussions were held with all parties to obtain facts which led to the conclusions	28165326				Initiator contacted for input.				N
D-2013-23233	While marking up Operations flow sheet NK38-FEX-38060-0501-02 to reflect the changes made to Flow diagram NK38-F0D-38060-0202 under DEC 120448, it was discovered that the locations of lines 38HS-L298-3/4HTE and 38SH-L1730-1/2AND as show on the 2 drawings do not agree. Each drawing shows a different line being upstream of the other.	NFE - NA	NFE - NA	AC = CF-B2	28162755				Initiator contacted for input.		Y		N
D-2013-19665	Problem Statement: Legacy configuration discrepancy discovered by EPC contract organization (RCMT) during performance of Design Change EC122212 on OPG Project#16-31555. (D2O Storage Facility HWMB-WA) Drawing NK38-F1H-75510-0001, R003 does not match the actual field condition of end pipe caps and valve positions. Detailed Discussion of Facts: [illegible]	Not required as per N-PROC-RA-0022	An OPEX search was performed using Power Search. There have been other SCRs of Design Drawings not being identical to the field but there has been no adverse trend and the issues were typically resolved via the DCR process. (Not required as per N-PROC-RA-0022)	Discussions were held with all parties to obtain facts which led to the conclusions (Note: Not required as per N-PROC-RA-0022)	[illegible]				Initiator contacted for input.		N		N
D-2013-11442	Darlington Plant Design was contacted to provide disposition to the filed SCR.	Plant Design's disposition is the following: 1. Condition assessments indicate no areas for concern. The building CCA's, which are in progress are to extend the design life of the facility. No further walkdowns required. 2. The existing calculation NK38-CALC-D09700017 is not a detailed design calculation and therefore, may not fully describe all required analysis. 3. The analysis of existing buildings is not covered under the West Annex project. The attention of the contractors should be focused on the new West Annex and the tie-ins to the existing buildings. Recommendation: Any further questions concerning the adequacy of the existing buildings should be referred back to the engineering group knowledgeable about the existing buildings (i.e. Civil Plant Design under Dean Townsend).	N/A	The Darlington Plant Design section reviewed the SCR and provided a written disposition in an email.					Initiator contacted for input.		Y		N
D-2013-06554	Problem Statement: Configuration management error discovered for the SG Fuel Tank (0-77200-TK1&TK2) Berm which may impact on construction and use of the future HWMB West Annex structure. Details: The bottom of the berm at finished grade has been identified to be further east in the field than shown in design documentation. Drawing NK38-D0H-27722-1001 shows the center line of the storage tank on the drawing is at 10003.50 E, the center line of the berm top is at 10018.00 E and that the bottom of the berm at finished grade is 10024.50 E. A field survey identified that the bottom of the berm at finished grade extends between 1.20 m and 2.14 m further east than documented. Condition was discovered while performing a survey to verify the location of the existing HWMB and the adjacent Berms. Survey was conducted in preparation for design and construction of the Heavy Water Management Building West Annex.	Not Required per N-PROC-RA-0022 (C3-NFE)	Not Required per N-PROC-RA-0022 (C3-NFE)	Not Required per N-PROC-RA-0022 (C3-NFE)					Initiator not reachable. His/her immediate supervisor contacted.		Y		N
D-2013-02405	C3 NFE	C3-NFE ACE not required	C3 NFE	C3 NFE ACE not required	[illegible]							NA	N
D-2013-00602	On drawing NK38-D0H-20110-0001 - Buildings and Structures Column Line Grid Key Plan, the HW Management System Structure has a dimension of 53,000 mm between grid line 'DA' and 'TM'. This dimension is in disagreement with NK38-D5A-23800-0003 - D2O Management Bldg. Plan at El. 100.000m, which says the dimension is 52,000 mm. This is a minor condition (legacy documentation issue). As per Screening Meeting This SCR is assigned a Category C3-NFE SCR at the MRM. Therefore Detailed Discussion of Facts is not required for this CAP.	SCR is assigned a Category C3-NFE SCR at the MRM. Therefore ACE Conclusions is not required for this CAP. Since the issue is because of a legacy error made when drawing was prepared, it is not feasible to define an RC type action to prevent recurrence. The only action for correcting the problem will be revising the drawing under Document Change Request (DCR) process as a type S action.	SCR is assigned a Category C3-NFE SCR at the MRM. Therefore Previous Similar Conditions is not required for this CAP. However, there have been several similar issues in the legacy documents. Darlington SCR data base was reviewed for similar conditions. There are 11 SCRs related to legacy errors found by using keyword "Legacy Error". Using keyword "Drawing Discrepancy" returned 17 SCRs.	Apparent Cause known: Legacy documentation issue. SCR is assigned a Category C3-NFE SCR at the MRM. Therefore Apparent Cause Methodology is not required for this CAP. The apparent causal factor CF-B2 is assigned to this SCR as per N-LIST-01908-10001. CF-B2 Technical Procedure: The programs and processes associated with the creation and maintenance of technical procedure did not ensure the technical procedures set high standards or tuned to ensure they were effective and efficient.	[illegible]				Initiator contacted for input.		Y		N
D-2013-00395	This condition was identified by the D2O Heavy Water Management Building West Annex Project (16-31555) and the details are clearly presented in the SCR condition description. Flow sheet NK38-FXX-56000-0511-R001 does not show the fuel tank berm sump pump receptacles on panel 0-56241-RP3413 Breakers CB5 & 7. NK38-D1S-5600-0093 shows these breakers. Flow sheet needs to be updated as required.	C3-NFE-This is a legacy configuration deficiency that requires no further analysis.	C3-NFE-This is a legacy configuration deficiency that requires no further analysis. There are numerous legacy configuration difficiency that gets identified when new work is done in the area and are addressed as needed. Previous similar condition is not applicable as stated above.	C3-NFE-This is a legacy configuration deficiency that requires no further analysis. Just validity of the condition and the need to update the flow sheet needs to be assessed and actions taken as required to restore configuration management.	28152454							NA	N
N-2012-04396	As identified under Description Condition of the SCR, the relevant facts are listed below: 1) The qualification and training requirements identified in the Design Agency?s Position requirements documents for those staff (Technical Specialist, Senior Technical Specialist, Technical Consultant) filling in the roles of Design Team Leader, Modification Team Leader, Technical Consultant and Designer for the OPGN Refurbishment D2O Storage project did not identify any Engineering Qualifications. Note: However those who took the role of MTL/DTL for our project were engineering graduates even though some of them did not have P Eng certification. Those who prepared/certified the Eng Documents such as Modification Design Requirements had P. Eng 2) Design Agency?s staff qualification records did not show consistency in their preparation, review and approval. 3) Agency?s internal Corrective Action Request initiated in April 2012, in response to OPG NCAR ?NOAUDIT-12-02? was still open and not resolved The above indicate the lack of effective implementation of Corrective Action Program and inadequacy in the Agency?s training and qualification process. Actions already completed: 1) Nuclear Refurbishment Design Engineering Manager met with the senior management of the Design Agency and discussed the observations from the Quality Surveillance at the Design Agency and the Agency has agreed to revise the position requirements document to be in line with those required by project role positions. Agency also agreed to work on the Qualification Records to be consistent. 2) The Nuclear Refurbishment Design Engineer met with the Agency?s Chief Engineer on Sept 11th 2012, and the agency agreed to address them through project role specific job documents and implement them. 3) Nuclear Supply Chain Quality Services organization has agreed to review the NCARs issued on RCMT, their current status to bring the issues to a closure. Initiate NCAR if required to address the deficiencies identified during the Quality Surveillance and to ensure effectiveness in their corrective action process. 4) NR Quality Engineering Manager is discussing with NR Engineering Director on an agreed upon process to continue similar Quality Surveillance. (No need to identify a specific action) 5) The Quality Eng Surveillance team discussed on the potential changes required in related OPGN governing documents that are issued and others that are still in draft stage make the required changes through Document Change Request (DCR) or email messages identifying the issue with the Document owner. Required DCRs and email message would be completed in the coming few days.	*Weakness in Agency's process of addressing Corrective Actions initiated *Improvements required in the position requirements documents a swell as in the preparation, review and approval process of maintaining Qualification records	SCR N-2011-05958 Potential Issues with Design Agency RCM Technologies Staff Qualification Records. Details in Self Assessment	C3 NFE SCR and hence a formal Barrier Analysis was not required to be carried out.	28147799						N		N
N-2012-09404	Detailed Discussion of Facts Problem A walkdown was scheduled for 14DEC2012 and notification was given to the vendor site rep on 10DEC2012. At this time, the vendor PJB form (the field level risk assessment, or FLRA) and the Pre-Job Brief/ Post Job-Review and General Expectations forms were provided for completion. This would cover the steps required to meet OPG's minimum vendor supervisor pre-job brief expectations. Due to uncertainty completing the forms, the number of individuals involved increased as it appeared that the required notifications and actions would not be completed with the required advanced notice. A great deal of time was spent coordinating resources and communicating to the various parties the day prior to the walkdown, 13DEC2012. As well, despite reviewing the procedure (N-PROC-RA-0010) and multiple attempts to contact Rad Data, questions regarding obtaining a TLD still remained. The walkdown was pursued anyway and took place on 14DEC2012 as planned, although the CMO Site Contact was required to provide an escort so the walkdown could proceed. Critical Facts: The OPG requirements for vendors performing walkdowns has been under development since previously OPG did not have any process in place. Requirements for walkdowns were sent to the vendor site reps 19SEP2012, with updates being sent 06NOV2012 and 11DEC2012. The requirements include a minimum 24 hours advanced notice to the CMO Site Contact, OSS Contract Administrator and the Project Manager, as well as a PJB from the vendor supervisor among the list of expectations. For consistency, the vendor created an additional form/ checklist to meet the list of OPG expectations. Since the PJB would be given by the vendor, the vendor PJB process also must be followed, which includes a FLRA. These were provided to the individuals attending the walkdown to complete. The individuals attending the walkdown had not been on a walkdown at OPG previously, did not have any experience or roll-out of the process, and were sub-contracted, so they were not familiar with the vendor PJB process either. There was some confusion in completing the required paperwork, which went through multiple iterations. Additional individuals were drawn into the process in order to ensure the walkdown continued as scheduled. One item required that the forms did not address, was how to obtain a TLD. The vendor walkdown participants were security cleared and Orange Badge qualified and had DISNs assigned from another site, however they did not have TLDs assigned at Darlington. An email to rad data provided N-FORM-10019 and reference to N-PROC-RA-0010 however this did not address how to complete section C of the form, who the OPG Supervisor/Sponsor should be, or how long it takes to have a TLD assigned. Calls to Rad Data were not answered. The day of the walkdown, the CMO Site Contact signed N-FORM-10019 as the OPG Supervisor/Sponsor in order to comply with the definitions section of N-PROC-RA-0010 requiring a facility sponsor whose primary work location is at the Nuclear facility to sign. Once submitted to Rad Data, notification was given that 24 hours was required to obtain the DISN information. A red visitor TLD badge was given, which would require an escort. The CMO Site Contact escorted the walkdown so it could take place as planned. SCR N-2012-06404 was initiated to document the sequence of events for was arranging a walkdown of the MCR to occur on 14DEC2012. The specific problems that occurred are itemized below: 1. Confusion in preparing vendor PJB and notification forms 2. The process for walkdown notifications and pre-job briefing took a great deal of time and did not appear to support the task in a timely manner 3. Confusion regarding the process and sign-offs required for obtaining TLDs	ACE Conclusions Primary Failed Barrier: Administrative Procedure Quality Apparent Cause: Ambiguity in the process regarding what should be provided to OPG, what should occur but be transparent to OPG, and the specific roles and responsibilities especially with regards to other processes (e.g. vendor PJB/FLRA process, OSHA requirements for PJBs). Trend code FD-APQ. Consequences: Personnel Safety - Confusion in the PJB process can lead to a less than adequate PJB. Economic Impact - Confusion can lead to poor management of resources (time, and personnel), reduced productivity as well as potentially delay walkdowns and impact the project schedule. Contributing Failed Barriers: Administrative Procedures Apparent Cause: N-FORM-10019 and its associated procedure N-PROC-RA-0010, are written for individuals or their OPG sponsors working at the nuclear facility. Refurbishment staff are not currently located in a building that is considered part of Darlington site. The form/procedure was not effective for all applications or circumstances. Trend code CF-B1. Consequences: Personnel Safety - it is important that the radiological sponsor be aware of current site conditions so that accurate information can be provided in PJBs. Economic Impact - Confusion can lead to poor management of resources (time, and personnel), reduced productivity as well as potentially delay walkdowns and impact the project schedule. Contributing Failed Barriers: Personnel Awareness and Communications Apparent Cause: Individuals tasked with preparing forms had not prepared forms before and it was their first time working through the walkdown notification process. Too many individuals were involved in the completion of forms/ process each with only a small part in the final product, so incomplete information or information requiring unavailable individuals may have been provided or required. Trend code EP-IC. Consequences: Economic Impact - Reduced productivity Closed out SCRs: There are no SCRs closed to this SCR.	A search of the NOSS SCR Database was performed with the Unit filter on NR&PS. The following keyword searches were used: "Walkdown" and "Walk down" N-2012-03048, "DNGS Refurb Field Walkdown Delay due to Incomplete Contractor (Design Agency) paper work" 07JUN2012 N-2012-04931, "Project 16-31555: ES-MSA Staff not qualified to perform site walk downs" 25SEP2012 N-2012-05472, "NR OSS Vendor did not inform Tempus gang owner of walkdowns" 10OCT2012 OSS Vendor email notification to the OSS Contract Administrator also did not include all required information. N-2012-05823, "BOP Project #73305 - OSS Vendor task NR-2012-0042 - Walk down cancelled" 14NOV2012 Walkdown was delayed by two days due to uncertainty regarding station access paperwork for new staff. The first two SCRs listed indicate delays due to incomplete paperwork or additional OPG support to sponsor unqualified vendor staff on walkdowns. Although these SCRs are related to walkdowns, they do not have the same apparent causes. The current process requires appropriate notifications to be sent out including notification of any escorting requirements, and also should ensure that qualifications are setup and paperwork is completed in advance. The last two SCRs listed relating to notification emails and the process for obtaining TLDs are more of an awareness issue with the current process. The first set of instructions sent to the OSS Vendor Site Reps was sent 19SEP2012, with updates being sent 06NOV2012 and 11DEC2012. The notification process was under development during this time as no process had previously existed. This process was created to ensure the OSHA requirements for extended employers were being fulfilled, while a full understanding of its implications and division of responsibilities was still being developed. Some of these issues can be considered "growing pains" since the notification process is new to both OPG and OSS vendors, and vendors must ensure greater numbers of their staff have the appropr	Barrier analysis was used to gather and evaluate the information. N-FORM-10134 is attached.	28152053				Initiator contacted for input.		Y		Y
D-2013-00972	The SCR was initiated by the project team working on the D2O storage tank project. Issues raised in the SCR include configuration difficiencies such as Level Indicators 0-63850-LI6#2, 0-63850-LI7#2, that are on the logic diagram having no MEL record and further issues related to signal converters 0-63841-LY11, 0-63841-LY12 not having BOM and CAT ID.	C3-NFE-To review the diffciency and create MEL records per governance. BOM or CAT ID need not be created unless the project needs the CAT ID and BOM if there is requirement for the project. If some devices identified in this SCR belong to replace category, then parent CAT IDs should be created. This is to be decided by the project as needed. Will not be addressed as part of the CAP of this SCR. This was discussed and agreed to with the Desing manager who is also the EO manager of this SCR.	C3-NFE-Legacy difficiency	C3-NFE-These are legacy difficiencies that gets addressed as and when they are identified. MEL and BOM databases started with the creation of PassPort (New Asset Suite) and are still growing and will continue to grow as the CMR project only covered essential part of the OPG assets.	28152499						N		N
N-2013-17054	Detailed Discussion of Facts Problem A walkdown was scheduled for 14DEC2012 and notification was given to the vendor site rep on 10DEC2012. At this time, the vendor PJB form (the field level risk assessment, or FLRA) and the Pre-Job Brief/ Post Job-Review and General Expectations forms were provided for completion. This would cover the steps required to meet OPG's minimum vendor supervisor pre-job brief expectations. Due to uncertainty completing the forms, the number of individuals involved increased as it appeared that the required notifications and actions would not be completed with the required advanced notice. A great deal of time was spent coordinating resources and communicating to the various parties the day prior to the walkdown, 13DEC2012. As well, despite reviewing the procedure (N-PROC-RA-0010) and multiple attempts to contact Rad Data, questions regarding obtaining a TLD still remained. The walkdown was pursued anyway and took place on 14DEC2012 as planned, although the CMO Site Contact was required to provide an escort so the walkdown could proceed. Critical Facts: The OPG requirements for vendors performing walkdowns has been under development since previously OPG did not have any process in place. Requirements for walkdowns were sent to the vendor site reps 19SEP2012, with updates being sent 06NOV2012 and 11DEC2012. The requirements include a minimum 24 hours advanced notice to the CMO Site Contact, OSS Contract Administrator and the Project Manager, as well as a PJB from the vendor supervisor among the list of expectations. For consistency, the vendor created an additional form/ checklist to meet the list of OPG expectations. Since the PJB would be given by the vendor, the vendor PJB process also must be followed, which includes a FLRA. These were provided to the individuals attending the walkdown to complete. The individuals attending the walkdown had not been on a walkdown at OPG previously, did not have any experience or roll-out of the process, and were sub-contracted, so they were not familiar with the vendor PJB process either. There was some confusion in completing the required paperwork, which went through multiple iterations. Additional individuals were drawn into the process in order to ensure the walkdown continued as scheduled. One item required that the forms did not address, was how to obtain a TLD. The vendor walkdown participants were security cleared and Orange Badge qualified and had DISNs assigned from another site, however they did not have TLDs assigned at Darlington. An email to rad data provided N-FORM-10019 and reference to N-PROC-RA-0010 however this did not address how to complete section C of the form, who the OPG Supervisor/Sponsor should be, or how long it takes to have a TLD assigned. Calls to Rad Data were not answered. The day of the walkdown, the CMO Site Contact signed N-FORM-10019 as the OPG Supervisor/Sponsor in order to comply with the definitions section of N-PROC-RA-0010 requiring a facility sponsor whose primary work location is at the Nuclear facility to sign. Once submitted to Rad Data, notification was given that 24 hours was required to obtain the DISN information. A red visitor TLD badge was given, which would require an escort. The CMO Site Contact escorted the walkdown so it could take place as planned. SCR N-2012-06404 was initiated to document the sequence of events for was arranging a walkdown of the MCR to occur on 14DEC2012. The specific problems that occurred are itemized below:	ACE Conclusions Primary Failed Barrier: Administrative Procedure Quality Apparent Cause: Ambiguity in the process regarding what should be provided to OPG, what should occur but be transparent to OPG, and the specific roles and responsibilities especially with regards to other processes (e.g. vendor PJB/FLRA process, OSHA requirements for PJBs). Trend code FD-APQ. Consequences: Personnel Safety - Confusion in the PJB process can lead to a less than adequate PJB. Economic Impact - Confusion can lead to poor management of resources (time, and personnel), reduced productivity as well as potentially delay walkdowns and impact the project schedule. Contributing Failed Barriers: Administrative Procedures Apparent Cause: N-FORM-10019 and its associated procedure N-PROC-RA-0010, are written for individuals or their OPG sponsors working at the nuclear facility. Refurbishment staff are not currently located in a building that is considered part of Darlington site. The form/procedure was not effective for all applications or circumstances. Trend code CF-B1. Consequences: Personnel Safety - it is important that the radiological sponsor be aware of current site conditions so that accurate information can be provided in PJBs. Economic Impact - Confusion can lead to poor management of resources (time, and personnel), reduced productivity as well as potentially delay walkdowns and impact the project schedule. Contributing Failed Barriers: Personnel Awareness and Communications Apparent Cause: Individuals tasked with preparing forms had not prepared forms before and it was their first time working through the walkdown notification process. Too many individuals were involved in the completion of forms/ process each with only a small part in the final product, so incomplete information or information requiring unavailable individuals may have been provided or required. Trend code EP-IC. Consequences: Economic Impact - Reduced productivity Closed out SCRs: There are no SCRs closed to this SCR.	A search of the NOSS SCR Database was performed with the Unit filter on NR&PS. The following keyword searches were used: "Walkdown" and "Walk down"	Barrier analysis was used to gather and evaluate the information. N-FORM-10134 is attached.	28152053				Initiator contacted for input.		Y		N
D-2013-18217	Statement of Problem: This SCR identifies the following four issues: 1) Unsafe grating, 2) Inadequate pipe support, 3) Inadequate P. Eng. certifications of documents, and, 4) Engineering products not accepted by OPG 1) Unsafe Grating Background - Unsafe grating: the opening cut into the grating did not include the mandatory banding to reinforce the cut edges to safely transfer the load around the cut-out. As a result, the grating East and West of the hole cut for the dewatering pipe is now unsafe. Facts - Workers enlarged an 180 mm x 180 mm grating opening to about 250 mm x 250 mm, but because it was late in the day, planned to weld the required banding the next day. No signs or barriers where in place when this was discovered and described in SCR D-2013-17008. Work was being performed under approved RCMT field change 13720-FC-00007. A timeline for the sequence of events is a follows: EC 123123 R001 Released 21 August 2013 RCMT field change 13720-FC-00007 (to cut grating) issued 18 September 2013 Discovery in field of cut grating (per SCR D-2013-17008) 31 October 2013 EC 123123 R002 (including grating change) Accepted by OPG DE 25 October 2013 EC 123123 R002 (including grating change) Released 28 October 2013 AFS for EC 123123 R002 26 November 2013 Interim Actions: a) Notified OPG project lead of the unsafe field condition; b) Notified FLM; c) Project coordinator initiated the task of installing barrier 2) Pipe Supports Background - Pipe supports use a steel plate held down with sandbags have been installed, but without the sand bags. The resulting design is using gravity and friction to resist hydraulic flow loads in a plastic pipe. Facts - Field change EC 13720-FC-00018 (FIC 04) was approved on 01 October 2013 to use a steel base plate and sandbags to support the dewatering discharge line because the original drilled anchors could not be installed because on interferences. Sandbags, however, were not installed due to later concerns about losing sand into the CW flow. The MSA contractor then provided assessment NK38-CORR-12320-0488714 showing that the weight of the base plate alone is sufficient to support the dewatering line. A timeline for the sequence of events is a follows: EC 123123 R001 Released 21 August 2013 RCMT field change 13720-FC-00018 (pipe support) issued 27 September 2013 Discovery in field of cut grating (per SCR D-2013-17008) 31 October 2013 EC 123123 R002 (incl. support change) Accepted by OPG DE 25 October 2013 EC 123123 R002 (incl. support change) Released 28 October 2013 AFS for EC 123123 R002 26 November 2013 Interim Actions - No interim actions were required.	ACE Conclusions Primary Barrier (s) that failed: The following primary barriers failed: For items 1) Unsafe Grating, 2) Pipe Support, and 4) OPG Reviews, the failed barrier was lack compliance with OPG Engineering Change Control (ECC) Procedures, N-PROC-MP-0090, for field changes and N-DAI-00150-10000, Contractor/Owner Interface Requirements for Nuclear, Section 3.76-3.79. For item 3) Sealing of Documents-SCR N-2013-04430 has been raised to separately address MSA contractor's compliance with CSA N286 including independent verification and qualification requirements. How and Why Barrier(s) failed: How: Field changes were perceived as a non-intent changes. The failed barrier was lack compliance with OPG Engineering Change Control (ECC) Procedures, N-PROC-MP-0090, for field changes and N-DAI-00150-10000, Contractor/Owner Interface Requirements for Nuclear, Section 3.76-3.79 which require intent changes to be process by EC revision and not by Field Change process. Why: Barrier was weak because of non-conservative decision to process change to grating through the Field Change process instead of EC revision. The apparent causes are: Lack of awareness of MSA contractor field and support staff about the rigor required for processing field changes. The MSA contractor's initial determination that the changes mentioned in 1) and 2) were non-intent changes was erroneous and non-conservative. The MSA contractor corrected this situation during the installation phase and processed these as an EC revision. Corrective Actions: 1) Unsafe Grating Following SCR D-2013-17008, the MSA contractor issued internal Corrective Action Request 2013-59 which determined that the grating modification was a design intent change (because it affected the load bearing capacity of the grating) and that the field change was not the appropriate process to use. The MSA contractor then prepared an intent change revision to EC 123123 (R002) to include the change in the grating. Engineering assessment NK38-REF-27100-0480410, was also prepared by the MSA contractor to confirm that the design change was acceptable. This EC revision was reviewed and accepted by OPG. The MSA contractor issued Briefing Card CAR 2013-59, 'Field Changes and Procedural Compliance', to all affected staff to reinforce the requirement that field changes are not to be used for changes involving design intent.	SCR search was performed for ECC process non-compliance for D2O project by MSA vendor RCMTECH. Following SCRs were identified: D-2013-17008, and D-2013-04430. Both SCRs were considered in preparing the CAP for SCR D-2013-18217.	ACE Methodology Barrier Analysis was used for the evaluation.	28163980				Initiator contacted for input.		Y		Y
D-2013-20368	Present learnings from D-2013-20368 to station as HuLL.	NFE - NA	NFE - NA	AC = CF-R	28161909						N		N

SCR #	SCR Date	Status	SCR_Age	Title	Disc Date	Eq Fail	Event Date	Location	Unit
D-2014-03300	01/30/2014 03:18 PM	COMPLETE		T1301: Delay to TRF Restart due to ACS Project # 16-38401 delays	01/30/2014	N	01/30/2014	TRF ACS	TRF/HW - TRF/D2O BUILDING
N-2014-14238	05/01/2014 03:34 PM	APPROVED		D2O Annex Design Engineering Change Package Schedule Delays	05/01/2014	N	05/01/2014	NA	PSEMOD - Inactive/Missing Code

SCR #	Cond. Descr	Action Taken	Recommended Resolution
D-2014-03300	During ACS Project execution of project # 16-38401, numerous issues were encountered which delayed ACS availability and T1301 critical path. This was discovered when ACS was not declared Available for service when originally planned. Impact of ACS Project delays is 9.5 days however due to finding efficiencies, and bringing TRF lockdown prerequisites forward, 2 days were recovered. As a result, expected TRF restart is Mar 6, 2014	Several SCR's submitted to document the reasons for delay including the following SCRs: D-2013-22921 TRF: T1301 - RY808 stack alarm received D-2013-24239 TRF: T1301 7/8 Window Delay relating to ACS Project Work ... D-2013-23491 TRF: T1301 - ACS unavailability due to unplanned delays ... D-2014-00084 TRF: T1301: Tritium Oxide Release to Room During Purging ... D-2014-00176 TRF: T1301: Air clean up system work delay due to PV-40 ... D-2014-00227 TRF: T1301: Air Clean-up System work permit for modification ... D-2014-00656 TRF: T1301: High H2 isotope concentration in Helium used ... D-2014-00830 TRF Delay to ACS F1-40 hour test run due to unusual noise ... D-2014-02375 TRF: ACS-0-39520-F1 Legacy Issue N-2014-03114 Permit Delay to start 48 hour Run Test (Commissioning) ... N-2014-01072 Permits delay to POKD0667 TRF Air Cleanup System Modification ... N-2013-24240 Discovery Work TRF ACS Fan#1&Fan#2 FIC Revision ... N-2013-23627 T1301 Project#16-38401 TRF ACS/QACS commissioning delayed in addition to documenting in SCRs TRF diverted significant resources to assist ACS project, as it became the critical path for T1301.	Unforseen issues were discovered during the initial post maintenance test run. The team, along with TRF staff support, rallied together to address the issues to allow the ACS to be returned to service.
N-2014-14238	The D2O West Annex Project Design Schedule shows that the following EC Designs have not been submitted for final acceptance and remain outstanding well beyond their initial scheduled completion dates. Critical Target Completion Dates, for many of the tasks supporting completion of these ECs, are routinely missed by engineering, procurement, construction, and client stakeholders and status reports are often absent, inaccurate or misleading. The conditions described above were discovered through analysis of DCC Meeting Minutes, Blackout Chart historical commentary, SCR database, surveys and direct observation. These conditions extend to the D2O West Annex Project Engineering, Procurement and Construction team, as well as the client organization, however ownership of the EC schedule, and adherence to it, resides with the Design organization and, more specifically, its Project Management Team.	Filed this Trend SCR	1. Summarize the reported reasons for schedule delays and status uncertainty; 2. Evaluate and identify the causal factors which have resulted in the lack of EC schedule adherence and; 3. Identify and develop corrective actions for the factors within the scope of the Design organization. READ 2014/05/02 17:21 : Recommend C3 common cause evaluation as this is an adverse trend. Based on N-LIST-01900-10005 (Station Condition Record Significance Level Criteria), it is recommended to be significance level 3 because delays to the engineering schedule has the potential to have a significant impact on the D2O Project AFS, a pre-requisite to the Darlington Refurbishment Project.

SCR #	Initiator	Other Person Involved	Initiator Org	FLM	Initiating Mgr	Cat	Fire	Safety	Reportable	Affects Oper	Re Work	PIR	Different Sensitivity	TOE Reqd	TOE Status	Diff Oper Than Initial	Diff Rec Than Initial	Diff Sig Than Initial
D-2014-03300	CRAWFORD [redacted]		D-DMCTRFMFH	FORBES [redacted]	HAMILTON [redacted]	C 3	N	N	N	N	N	Kenneth Hamilton						
N-2014-14238	PETERS [redacted]		N-PMMDPM	READ [redacted]	COLELLA [redacted]	C 3	N	N		N	N	Anthony Colella						

SCR #	Ev Mgr	Evaluator	Eval Org	Trending Orgs	CA Plan Due Dt	CA Plan Completion Dt	CAP Due Dt	SOER Flow	Coordinator	Coordinator Comments	Vend Ref	Vend CAP NCR	Vendors
D-2014-03300	Degan Pagnan	DAN LONGMIRE	N-PMDPDM	D-DMCTRFMFH N-PMDPDM	3/3/2014	3/5/2014	3/3/2014	N	Nick Kennedy		Generic		BLACK&MCDONAL SPENCER,STURG
N-2014-14238	Anthony Colella	DAN LONGMIRE	N-PMDPDM	N-PMMDPM N-PMMDEM N-PMDPDM	6/5/2014	6/5/2014	6/5/2014	N	Paul Rajan		Generic		BLACK&MCDONAL RCMT,CH

SCR #	Ext WANO	Ext COG	Ext NA	Int FH	Int NA	Days At MRM	SCR Reviewed	MRM Review Dt	MRM Comments	Line Management Codes	StationReworkERA	EquipmentFailure	ER Program	Failed Eqpt Type
D-2014-03300	N	N	Y	N	Y			3/3/2014						
N-2014-14238	N	N	Y	N	Y			6/6/2014		CON-PI ENG CON-PI SCM				

SCR #	Discussion of Facts
D-2014-03300	Note: Apparent Cause Evaluation for this SCR was completed by P. Razvi. Problem Statement:. The original committed to AFS milestone date of 7 November 2013 for the TRF Air Cleanup System (ACS) Project 16-38401 was missed which resulted in a delay to the Tritium Removal Facility Outage. Detailed Discussion of Facts: The objective of this project is to improve reliability, performance, and maintainability of this critical Auxiliary System in the Tritium Removal Facility (TRF). Facts below were gleaned from several SCRs which were analyzed and which provided the causes for the delay (the delays are listed in chronological order): (1)2 month delay caused by TRF Directed Change - As a result of a directed change by TRF, the project Start of Installation milestone was delayed by approximately 2 months from 5 October 2013 to 29 Nov 2013 to accommodate the the Low Pressure Service Water tie-ins (LPSW) installation by D2O project 16-31555. This initial delay put the project at an immediate significant disadvantage at the very outset by significantly compressing the float available in schedule. TRF wanted the execution of LPSW tie-in by D2O project & TRF ACS project# 16-38401 work done in the same TRF maintenance window to minimize ACS unavailability & avoid un-necessary DOM approval to take the ACS out of service. Impact of the 55 day directed delay on the project schedule is documented in SCR D-2013-19100. (2)Start of milestone was delayed by 1 day because permit was not applied due to TRF: T1301 - RY808 stack alarm (blown rupture disc and associated tritium hazard) received during execution of workplan for Air Cleanup system modifications to purge and sample the ACS. LPSW and Chilled water systems to condensers were unavailable due to permitry isolations as TRF Operations received a high stack release alarm (150 uCi/m3). This delay is documented in SCR# D-2013-22921. (3)A 2 days delay was incurred to Project because there was higher than anticipated contamination upon opening of ACS system which required a backout. The contamination was above the approved REP (Radiation Exposure Permit). Conditions were re-assessed by ALARA group and new REP was updated to include actual conditions and thereafter contractor installation was allowed to progress. This delay is documented in SCR# N-2013-23854. (4)A 1 day delay was incurred to Project as TRF: T1301 outage was unable to apply Work Protection to 0-39520-FM1/FM2 as one of the devices was not load verified and the corresponding isolating PC17A-N permit did not have a step that stated to ensure device is load verified as per work protection LIN. This was discovered during license review by Controlling Authority. This delay is documented in SCR# D-2013-23491. (5)A 2 day delay was incurred to Project due to an unexpected tritium release in TR205 while performing function checks of new 0-63952-PRV208 using Helium under WO 2192825 (see SCR D-2014-00084). In addition, the ACS was then purged with helium in preparation for Helium leak checks. Subsequently, RY808 alarmed on high Tritium oxide and sampling of the helium source from 0-39360-TK2101 showed high concentration of hydrogen content: 4.64% D2 in helium (above lower explosive limit in air). This resulted in a potentially hazardous hydrogen isotope/helium/air mixture in the ACS. Prior to work commencing for the ACS modifications, 0-39360-TK2101 was sampled and verified (on Nov 27th, 2013) to be less than 2% LEL (0.08% H2), allowing for hot work. Work was stopped and ACS due to tritium and potential conventional hazards, procedures were re-written to ensure Helium bottles were used as the Helium in 0-39360-TK2101 had higher than allowable D2/H2 concentration. This delay is documented in SCR# D-2014-00656. (6)Delays due to short power supply cables - The Contractor removed the TRF ACS Fan# & Fan#2 end enclosures to gain access to the work on replacing the FM#1 & FM#2 and discovered the existing TRF ACS FM#1/FM2 existing power supply cables appeared to be pre-installed from the factory. The cable conductors wire hard drawn copper and solid wire that do not allow for the ring connector to fit onto the conductor as it cannot be crimped to a solid wire. For the new FM#1/FM#2 replacement, the existing power cables were too short to be reused as there is no slack to terminate the new control wires through the side of the enclosure thus not allowing the fan motors to be pushed back inside the fan enclosures. During Detailed Design, OPG Project team was informed that there were no information, drawings, photos or details available regarding the power supply cable and how it was attached internally. During the design phase, Project was not allowed to view inside the fan enclosures (large undertaking to take the ACS out of service in order to remove end closure flanges). FIC was initiated to install a new junction box to connect the existing power supply cables to the new fan motors. As a result of this legacy issue, installation work was delayed by 4 days. This delay is documented in SCR# N-2013-24240. (7)A 1 day delay was incurred to project because the TRF Radiation Protection Coordinator (RPC) supporting the contractor electricians strained his shoulder and required medical attention during FM1/FM2 installation. Work was stood down and no work commenced as RP support is required to work inside the TRF ACS. This delay is documented in SCR# N-2013-24640. (8)Delays due to internal interferences in ACS Fan 1: The re-assembly of the Fan Motor 1 0-39520-F1 by the contractor following currently issued maintenance procedure resulted in difficulty achieving necessary clearances at the 5th stage impeller hub and end head baffle. The design of this fan has a legacy issue where it does not allow for reliable assembly due to tight clearance requirements. Evidence from as-found condition also showed contact at same locations. This legacy issue resulted in 3 days delay and is documented in SCR# D-2014-02375. (9)Caused by Trouble-shooting: During trouble-shooting of TRF ACS fan motor FM1 legacy interference issues, Project re-installed 2 existing impellers and 3 new impellers as per the direction of HIT Team. Work on impellers was outside the scope of the project. As per the scope of the project, existing impellers were to be re-used. The interference issues were resolved with this new configuration of using 2 existing impellers with 3 new impellers. This legacy issue resulted in 4 days of delay and is documented in SCR# N-2014-03306.
N-2014-14238	Problem Statement: D2O Annex Project Design Engineering Change Package Schedule Delays have potential to impact D2O Project AFS. Detailed Dicusion of Facts (from SCR): The D2O West Annex Project Design Schedule shows that the following EC Designs have not been submitted for final acceptance and remain outstanding well beyond their initial scheduled completion dates. Critical Target Completion Dates, for many of the tasks supporting completion of these ECs, are routinely missed by engineering, procurement, construction, and, status reports are often absent, inaccurate or misleading. The conditions described above were discovered through analysis of DCC Meeting Minutes, Blackout Chart historical commentary, SCR database, surveys and direct observation. These conditions extend to the D2O West Annex Project Engineering, Procurement and Construction team, as well as the client organization, however ownership of the EC schedule, and adherence to it, resides with the Design organization and, more specifically, its Project Management Team. Risks/Consequences: potential to have a significant impact on the D2O Project AFS, a pre-requiste to the Darlington Refurbishment Project. Interim actions Taken: SCR filed and 5 SCRs closed to this one.

SCR #	Conclusions
D-2014-03300	Primary Failed Barrier: Inadequate TRF maintenance procedure Apparent Cause (How Barrier Failed):. TRF maintenance procedure NK38-MM-39500-10001 lacked details about minimum clearances & tolerances i.e. baffle end plate projection Why Barrier Failed: TRF was aware of legacy internal interferences in Fan 1 issues since 1990 between the impellers and end baffle plate. This legacy interference condition had not been addressed by TRF in subsequent revisions of the maintenance procedure to enable re-assembly of Fan 1. Project was not made aware of the legacy interference issue by TRF, during detailed design or installation planning. Other contributing barriers are: •Existing equipment condition was found to be degraded & showed evidence of wear. The modification has added Resistance Temperature Detectors (RTDs) as a predictive maintenance tool, to identify any signs of future degradation.. •TRF Directed Change (project management change process)- TRF failed to acknowledge and recognize that LPSW tie-ins & TRF ACS installation were critical path tasks and failed to consider impact of delays if issues were encountered in the TRF maintenance window. •Delays in installation due to as-found condition of TRF fan motors 1 & 2 short power supply cables issue •Poor Planning - Delays due to Permitry •Radiological safety hazards - Rad/H2 LEL hazards, REP and RPC Green-person non-availability Closed out SCRs: Not Applicable
N-2014-14238	The following have been developed from the Commom Cause Analysis (attached). Primary Failed Barrier: Methods of Communication (process) and Procedural Use and Adherence. How the Barrier Failed (Apparent Cause): LTA Communication Strategy (CF-A). The processes and procedures developed (including communication interface plan, expected behaviours and change management processes) were not adequate to address all of the activities required to perform design work, scope changes and commercial transactions (reviews, document flows, approvals etc.). Communication processes developed were not rigorously followed. Vendor Supervisor Oversight of Task and Schedule Adherence LTA (CF-H3). Why the Barrier(s) Failed: This was the first large scale construction project implemented using the EPC model. Design had committed to follow an Engineering Change process originally developed for small modifications. The process did not easily lend itself to a large project, with considerable scope increase and change, and is not well aligned with the customer's production-oriented methods. This lack of proven, refined processes was compounded by rapid organizational growth and an EPC model which discouraged teamwork. Also, RCMT established a communication plan early in the project however the plan did not adequately capture the communication interfaces required to successfully progress many of the ECs through the design process. Closed out SCRs: The following SCRs are closed out to this one: D-2014-14588 N-2014-14626 N-2014-14627 N-2014-14628 N-2014-14631 The above SCRs are all related to Engineering deliverable delays for this project and have been taken into account in the CCA and conclusions.

SCR #	Previous Similar Condition	Analysis Methodology	Action Req#	Addtl Action Req#	AOE	Coordinator Disposition	Discussion With Initiator	Event #	Initiator Req	% Power	HasAttachments
D-2014-03300	Searched all OPG data bases and COG website for OPEX using, %TRF re-start delayed%Project delay caused delay to TRF re-start% etc. from 04FEB13 to 04FEB14.	Facts and information was gathered from a variety of sources such as discussions and interviews with Project Engineer, Project Manager, Contract Monitor, contractor, TRF, etc. Barrier Analysis Worksheet N-FORM-10134 was also used. Several SCR's were also reviewed and analyzed which provided information on the delays. The SCR's which were reviewed and analyzed are as follows: 1.D-2013-19100 2.D-2013-22921 3.N-2013-23854 4.D-2013-23491 5.D-2014-00084 6.D-2014-00656 7.N-2013-24240 8.N-2013-24640 9.D-2014-02375 10.N-2014-03306 11.N-2014-03114	28165359						N		Y
N-2014-14238	D-2014-14588 N-2014-14626 N-2014-14627 N-2014-14628 N-2014-14631 The above SCRs are all related to Engineering deliverable delays for this project and have been taken into account in the CCA and conclusions.	Common Cause Analysis was performed by Engineering Vendor (RCMT) and is attached. Failed barriers and apparent cause(s) have been extracted from the CCA.	28168169				Initiator contacted for input.		Y		Y