ONTARIO POWER GENERATION

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N-FORM-11200-R004*

OPG Apparent Cause Evaluation (ACE) Grading Sheet

Use checklist with the requirements of N-PROC-RA-0022, N-STD-RA-0008 and N-MAN-01533.2-10001 to assess CAP quality.
Exception: External OPEX SCRs shall be graded using the "OPEX Quality Grading Sheet, N-FORM-11238.

SCR # N-2013-22011	**Significance Level:** C	**EO Manager:** Arun Kar
SCR Title: Resource allocation for resolving work protection issues in field for EPC Contracts (Project 16-31555)		**Evaluating Organization:** N-NRDEM
Graded by: Joy Vaneyk	**Review Date:** 13February2014	**Evaluator:** Aninda Dutta Ray

Criteria	**Grade 0, .5, 1, N/A**
Analysis Field 1: Detailed Discussion of Facts	
(1) Statement of Problem clear and concise	X1
• State the problems/adverse conditions that are addressed in the evaluation, including an explanation why. A discussion of risk is explained (probability x consequence).	
Comments 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 theprocess before going to Design, where work protection is required.	
(2) Critical facts and data adequately supported	X1
• Information is sufficient to convey an adequate understanding of the event itself. • The wording should be written such that any worker could reasonably understand the adverse condition. • Ambiguity and inconsistencies between the data entered by Initiator, FLM, or SCR Coordinator should be clarified and resolved by the Evaluator • This clarity is necessary to correctly understand the relationship between the problems or aspects (scope) addressed in the evaluation and the event or adverse condition itself (i.e., it provides context).	
Comments The issue was discovered during development of TRF feed & product tie-in (EC 120448) where an existing AWPP NK38-WPM-08400.11-00001-AWPP-109 was requested to be revised to support installation of the tie-in by performing an isolation assessment on existing valve 0-39320-MV1338. The task was assigned by Projects and Modifications to Refurb Engineering Oversight. Facts • Projects and Modifications requested OPG Engineering Oversight team to conduct an isolation assessment to support an EPC installation by supporting Work Protection. Email attached to SCR. • EPC has signed the ES-MSA • Isolation Assessment was completed by OPG Engineering oversight (NK38-CORR-39320-0484639 Rev.01) • Darlington Refurbishment – Work Protection Options Analysis NK38-REP-09701-10023 discusses Work Protection strategy for the overall Refurbishment activities.	
(3) Interim actions documented (or rationale provided for none) to control the situation prior to implementation of the Corrective Action Plan	X2

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- Interim Actions address weak or missing barriers, or mitigate the effects of the adverse condition between the time the need is discovered (i.e. adverse Condition Discovered), through evaluation phase, up to and including when the longer term corrective actions plan is completed.
- Documented as a completed assignment in the “Assignment Details” field with completion notes in the “ACE Conclusions” field.
- May appear as a Immediate Actions Taken in the SCR MRM Screen
- All weak or missing barriers identified in the SCR or Evaluation for which corrective actions are due after the CAP completion date require either an interim action, or a rationale why no interim action is necessary to address the issue.

Comments

Engineering Management directed OSS Oversight Support staff to conduct the assessment in support of OPG Projects and Modifications.

SCR filed to document isolation assessment needed to support EPC work protection and that OPG Engineering Oversight is not resourced for future similar work.

Analysis Field 2: Apparent Cause Methodology

(4)	Apparent Cause Analysis Methodology	X1

- Document the methods used to gather and analyze information to determine the apparent cause.
- Investigation reports developed in accordance with N-STD-RA-0008 should be electronically attached to the SCR.
- ACEs should be conducted in accordance with N-MAN-01533.2-10001, Incident Investigation – Apparent Cause Evaluation. As a minimum, ACEs require the use of either Barrier Analysis, or alternatively, for SCRs associated with equipment issues, a SATPS evaluation may be used - whichever form is used is attached to the SCR
- Additionally, for Equipment Reliability evaluations, an EACE form should be attached to the SCR.

Comments

Barrier Analysis was used for the evaluation. Barrier Analysis worksheet attached to SCR.

Analysis Field 3: ACE Conclusions

(5)	Primary Barrier(s) that have failed (to prevent the event) identified	X2

For each weak or missing barrier discussed, required elements are:

- What happened - a description of the most significant failed barrier that did not meet expectations (i.e. an event, inappropriate act, or equipment performance issue. For simple evaluations, credit may be given for pertinent information added by SCR initiator and FLM or by Evaluator in “detailed discussion of facts” field.
- How it happened - Sufficient information to logically link the weak or missing barrier to the adverse condition.
- The Barrier - A description of the highest ranked weak or missing barrier itself.
- Either the Barrier Analysis Worksheet, N-FORM-10134, or the SATPS, N-FORM-11052, is used to identify each weak or missing barrier and relate them to their “effect”.
- If no failed barrier identified, recategorize SCR to D4 for trending.
- If primary failed barrier appears incorrect, discuss with CACG Section Manager.

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Comments

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 2.3 Safety Work Protection f) 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 co-ordinating 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 trades 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 terms 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, where 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.

(6)	HOW and WHY barrier(s) failed identified and explained (the apparent cause)	X2

For each weak or missing barrier discussed, required elements are:

- How the Barrier is weak – What aspects of the barrier require improvement? (Not applicable to missing barrier)
- Why the identified weak barrier failed to prevent the adverse condition. Requires sufficient information to logically link the weak or missing barrier to event.
- Reference: N-STD-RA-0008 Section 1.8.4.
- At least one causal factor identified and the associated code assigned which aligns with the Primary Barrier that Failed. Reference N-LIST-01966-10001, Trend Codes Applied to SCRs.

Comments

The failed barrier was lack of enforcement with the ES-MSA regarding contractors scope regarding work protection.

Requesting services beyond the Engineering/Design oversight role in the project where the objective is to provide for the execution of engineering process and completion of engineering deliverables by the Contractor to ensure requirements of the contract terms and conditions are fulfilled in a timely way with the appropriate level of quality.

Project Schedule pressure to support installation

Lack of Questioning attitude regarding EPC Scope when instructing OPG Engineering Oversight to take on work to support an EPC installation activity.

Lack of understanding of the role of OPG Engineering Oversight as documented in the Project Plan NK38-PLAN-38000-10002

The barrier regarding the ES-MSA and Project oversight plan are weak as it is often not referenced by Projects and Modifications staff or Engineering staff.

(7)	Consequences of the adverse condition or event identified	X1

- Explicitly document the consequences of the adverse condition for the business. Consider safety (personnel, nuclear [3C's]), regulatory/oversight and economic impact.
- Explain why an evaluation is being done including why emphasis is placed on certain problems in the evaluation scope. (Credit is given for pertinent information added by SCR initiator and FLM or by Evaluator in "detailed discussion of facts" field.)

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Comments

The consequence of the adverse condition is that future support for work protection will not be resourced adequately by OPG. OPG may be performing work already assigned to the EPC. There is no impact to personnel, nuclear, regulatory/oversight and economic impact since the work will be peformed and it is just a matter of ambiguity to who performs the work.

(8) All closed out SCRs are addressed in the evaluation	X1

Required elements are:

- Explicitly document how the scope from closed out SCRs is addressed in the evaluation.
- Any scope (from closed out SCRs) not addressed in the evaluation is defined and a rationale provided (e.g. closed out to a separate SCR evaluation, management accepts risk…. Etc.)
- Each weak or missing barrier is logically linked to the event or adverse condition described in the closed out SCR(s)

Comments

There are no closed out SCRs in the evaluation.

Analysis Field 4: Previous Similar Condition/OPEX

(9) All Site SCR and external databases used to search previous similar events	X1

Required elements are:

- Search results list relevant SCR number(s) including a short description of the event(s). Rationale should be included as to how each SCR relates to the event being evaluated. (i.e. does it support the findings etc)
- Search criteria used – either based on the event itself (high level search criteria), or based on identified failed barriers, are acceptable.

Note: N/A or None are <u>not</u> acceptable.

- For SCR's identified as "Fleetwide", a task has been raised at each of the other OPGN sites to review this OPEX. If task not raised rationale given in CAP. Reference N-PROC-RA-0035 Section 1.2.4 for processing 'Fleetwide' SCR.

Comments

None. There were no similar SCRs regarding Refurb Engineering providing work protection or isolation assessments.

(10) Reason for recurrence of the condition if previous similar conditions were identified.	X1

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- For each SCR representing a past attempt to solve the same problem(s) or address the same failed barrier(s) we need to ensure that a similar CAP is not repeated expecting a different result
- Where the CAP is repeated, an explanation or rationale must be provided of how and why the previous evaluation or corrective actions failed to prevent the current event. Items to consider:
  - Appropriate SCR disposition given the impact of the event or adverse condition.
  - Quality of corrective actions (SMART – specific, measurable, achievable, reasonable, timely)
  - Quality of SCR evaluation (i.e. Were apparent causes found? Or was only failed barrier found? Or was only the condition addressed? Was extent of condition appropriately addressed in Corrective Actions?)

Comments

N/A - No associated or similar SCRs found.

Analysis Field 5: Other System or Organization Affected

(11) How the identified problem affects other units, systems, components, documents, organizations etc.	X1

- Once the evaluator finds the failed barriers including how and why they failed, it is required to extrapolate to determine other potential latent effects. Ask the question "Could this event have occurred in another station / unit? Required Elements include:
  - Consider the generic use of the results found… who else could benefit from the evaluation?
  - Does CAP address those who could benefit from the evaluation?

Comments

Projects and Modifications

Refurbishment Engineering

Darlington Plant Design

(12) Assignments address extent of condition	X2

Assignments should correct or mitigate latent effects of identified failed barriers and causes, and may also be used to confirm or determine actual extent of condition.

- Need to identify whether assignments are CAPR's or one time fix.
- Need to follow SMART criteria, including completion and success criteria.

Comments

Assignment 1 Reading requirement and sign back of ES-MSA and NK38-PLAN-38000-10002

Assigned to N-NRDEM

Roll Out issued ES-MSA and NK38-PLAN-38000-10002 to OPG Engineering Staff who are only involved with the D2O Storage Project.

Assignment Type RC

Due Date March 28, 2014

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Analysis Field 6: Corrective Actions	
(13) Assignments address the apparent cause of the condition (If enhancements are included feedback will be provided with no mark deduction)	X2
• For C1/2 - failed, weak or missing barriers and their causes are addressed with at least one CAPR that prevents recurrence. • For C3/4 - failed, weak or missing barriers and their causes are addressed with at least one CAPR that reduces the frequency of recurrence. • Enough information must be provided in the "ACE Conclusions" field to logically link the assignments with the barriers and causes to be addressed. Persons not associated with the evaluating department must be able to understand how the assignment will address the weak or missing barriers and causes. • Assignments include an action to complete an EOER for C1/2 SCRs.	
Comments Assignment will require engineering staff to review ES-MSA and D2O Storage Oversight Plans to provide understanding of EPC responsiblities and Oversight responsibilities.	
(14) Assignments correct the adverse condition (if required)	X2
• All known adverse effects of the failed or missing barriers are corrected or rationale provided, as to why they are not addressed. • Completed actions should be included as assignments with completion details documented.	
Comments Assignment will correct the condition by enforcing ES-MSA contractual obligations and Oversight Plan objectives.	
(15) Assignment(s) specific as to the required deliverable(s) and outcome	X2
Assignment is Specific (the S of SMART) • Each assignment includes the nature and the detail of the intended change(s) to the maximum reasonable extent. • Assignments that allow the assignee discretion to complete a change or not (e.g. assignments to review an issue and suggest a path forward) receive no credit even though they may be acceptable as enhancements only. • CAPRs and CA's are tracked to completion. Other assignments that initiate a process, within the guidelines of Appendix C of N-PROC-RA-0022, are acceptable (i.e. Initiated WR, filed a TPAR, submitted PMLP) shall receive a credit.	
Comments Assignment is specific to allow Engineering staff to become familiar with the ES-MSA and Oversight Plans.	

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(16) Assignments are measurable, and reasonably achievable by the assigned group. Assigned to appropriate group and concurrence documented.	X2
Assignment is Measurable, Achievable and Reasonable (the MAR of SMART) • Completion Criteria and Success Criteria are identified for CAPR's and CA's. (i.e.: the barrier strengthened, or implemented and cause corrected) • Name of person in group accepting the assignment is documented.	
Comments Action will promote reading of the ES-MSA and Oversight plan. Sign back will provide evidence that staff are aware of the documents and contents.	
(17) Due dates are timely, i.e. <180 days, unless flagged ECC, TCC or outage.	X1
Assignment is Timely (the T of SMART) • Assignments for which due dates exceed 180 days must either fall into one of the categories which are known to be difficult to achieve within six months (typically related to Engineering Change Control, Outage required, or Training Change Control) • Or a suitable rationale must be provided in the ACE conclusions field why the due date is not within six months • Assignment codes are appropriately flagged – with no mark deduction for assignment codes.	
Comments Assignment is timely since there are no work protection assesments required for the project presently and allow enough review time of both the ES-MSA and Oversight Plans	

TOTAL: Total out of 25 possible points. Multiply total by 4 for %.	**GRADING:** Use Site target expectations in the Corrective Action Program Health Performance Indicators to determine Pass/Fail.	