

Internal Audit

Bruce Power Ring Fence Audit

March 2015

Audit Rating:

Generally Effective

Distribution:

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1.0 EXECUTIVE SUMMARY

1.1 Report Rating and Summary of Findings

Report Rating: Generally Effective

| Dof # | Finding | Dick Type | Risk Rating ¹ | | |
|--|---|----------------------------|--------------------------|----------|-----|
| Ref # | Finding | Risk Type | High | Moderate | Low |
| 1 | Training requirements were either not adhered to or there was a lack of evidence to support completion of training. | Compliance / Regulatory | | Х | |
| 2 | A ring fenced record was found to be stored at a non-designated ring fenced storage location. | Compliance / Regulatory | | Х | |
| 3 | No formal tracking that monthly staff list reviews were performed completely and consistently. | Compliance / Regulatory | | Х | |
| 4 | Employees terminated or on leave were not removed timely from the Ring Fence. | Compliance / Regulatory | | | Х |
| 5 Documents and records stored at Kipling and within the Curator system no longer contain current ring-fenced information. | | Operational | | | Х |
| Total | | 5 | - | 3 | 2 |

1.2 Background

As part of the Bruce Lease Transaction, OPG and Bruce Power ("BP") have entered into a number of service agreements relating principally to technical services and support. In order to provide services, there is a need to exchange information between BP and OPG. The exchange of certain commercially sensitive information, specifically BP outage information not already in the public domain and unit condition information could potentially affect the bidding and pricing behaviour in the Ontario electricity market. These can also raise issues relating to OPG's Generation License and general competition compliance.

The key inspection and maintenance service agreement between BP and OPG officially terminated in June 2011. As a result, the ring-fenced information provided by BP to OPG has also been significantly reduced.

In compliance with OPG's Electricity Generation License conditions, OPG has committed to a system of internal controls to limit access to this information. The cornerstone of this system of controls is referred to as a "ring-fence". As part of OPG's ongoing commitment to the OEB, Internal Audit ("IA") conducts bi-annual audits of the Ring Fence plan with results reported to the OPG Board and the OEB.

1.3 Audit Objective & Scope

The objective of the audit was to independently assess OPG's compliance with the established requirements of the Ring Fence plan (the "Plan") since the last audit completed in March 2013. IA also evaluated changes made

¹ Please refer to Appendix C for risk rating definitions

to the Ring Fence ("RF") program governed by OPG-PROC-0002 'Bruce Power Ring Fenced Information' during the audit period.

In order to achieve the audit objective, IA performed testing on a sample basis to assess whether:

- The RF program and governing documents were in place;
- Roles and accountabilities were clearly defined;
- A training program was in place and required training was completed by all staff and contractors who
 required access to RF information;
- Appropriate logical and physical security controls existed for RF information;
- Proper classification and documentation management controls including receipt, release and disposal were in place; and
- Reporting mechanisms existed to escalate non-compliance for further investigation and consequence.

IA also assessed the remediation status of the 2013 BPRF Audit findings. For further details, refer to Appendix A. The scope of the audit covered the period from January 2013 to December 2014.

1.4 Conclusion

IA identified positive observations with regards to the BPRF program. These included:

- A high level of awareness of the BPRF program was noted among the key stakeholders and was supported by consistent and visible executive sponsorship. This has helped set the right tone at the top;
- A well-defined program has been in place which articulates the requirements set out in the Plan, key controls implemented and roles and responsibilities of the stakeholders;
- A rigorous training program has been established to educate employees on RF program requirements; and
- Escalation procedures are in place to help investigate, formally report and timely resolve potential violations.

The following control gaps were identified from this internal audit:

- Not all contractors completed the mandatory training requirements. Instances were noted where training
 was either not completed or evidence of training was missing;
- A RF record was kept in a non designated record repository or facility. We noted that the 'Minimum Handback Conditions Report' containing BP unit condition information was stored at a non BPRF designated locked room at the Bruce Power Lease Management office;
- The monthly Staff List review procedure may result in incomplete reviews to the list. In addition, ongoing access to the RF was not consistently reviewed; and
- Management actions implemented in response to the 2013 audit findings were not fully effective. See Appendix A.

Our key recommendations that could enhance the internal controls over OPG's compliance with the requirements of the Plan include:

- Management verification that all staff and contractors have received required training before they are added to the RF;
- RF sensitive information should only be stored in designated RF storage facilities; and
- A tracking mechanism should be implemented to ensure completeness of the Staff List review and clarifying the monthly review procedures.

The findings noted in the report have been reviewed with management who has committed to specific action plans to address these findings. Please refer to Section 2.0 for specific details of the above findings along with the associated risk impact, audit recommendations and management action plans.

2.0 DETAILED AUDIT FINDINGS

Internal Audit identified the following findings and recommendations which have been risk rated based on the definitions outlined in Appendix C:

1. Training requirements were either not adhered to or there was a lack of evidence to support completion of training.

Moderate

The OPG-PROC-0002 *Bruce Power Ring Fenced Information* specifies that staff shall complete the necessary training and contractors shall complete a Contractor Access Request Form ("CARF"). It further states that employees reinstated after a one year absence from the ring-fence shall retake the training and contractors should resubmit a new CARF when their term extends into a subsequent calendar year. IA reviewed training records for 25 employees and 49 contractors and noted the following:

- Twenty-eight contractors from did not have a signed CARF nor did they complete the necessary training before they were added to the Contractor Access Log. IA was informed that did not require BPRF training as had signed an OPG purchase order ("P.O.") which included a confidentiality clause;
- The CARF could not be located for one Nuclear Inspection and Maintenance contractor tested;
- Two employees did not complete refresher training when they were re-instated back into the RF after being removed from the Staff List for more than one year; and
- One contractor whose contract term extended into 2014 from 2013 did not resubmit a CARF for 2014.

For further details on the exceptions, refer to Appendix B: Details of Testing Exceptions - Finding 1.

Potential root cause & impact

Root Cause:

- Lack of management monitoring and enforcement of mandatory training required by the policy; and
- Management considered the confidentiality clause in the OPG P.O. sufficient and did not require complete the CARF.

Impact:

- Staff and contractors may not be fully aware of the requirements to protect and manage RF information. This may lead to unauthorized access, use and/or distribution of ring-fenced information; and
- Potential violation of OPG's Generation License conditions which could lead to revocation of OPG's license.

| Recommendation(s) | Management Action Plan | Responsible & Date of Implementation |
|--|---|---|
| Use the Contractor Access Log to track the submission of CARFs, training completion and reinstatement of employees and contractors to the RF; and Restrict access until all requirements have been met. | The BPRF administration team will conduct a review of all training / awareness methodologies and content to identify improvements to overall compliance including a review of how training will be tracked / verified going forward. After a review is completed, a plan will be developed to implement the recommendations. | Shelley Tucker Senior Manager Information Management and Program Authority Target Completion Dates: 1. June 15, 2015. 2. October 15, 2015. |

2. A ring fenced ("RF") record was found to be stored at a non-designated ring fenced storage location.

Moderate

For paper based RF information, management has indicated that the Records Archive at Kipling is the designated BPRF storage facility.

The Minimum Handback Condition Report (the "MHCR") received annually from Bruce Power (BP) contains BP unit condition information. This report was stored in the Bruce Lease Management Office ("BLMO") locked room among other BP commercially sensitive records. Since this storage facility is not a BPRF designated storage location, required document control processes were not being followed at this facility. These include use of charge out slips or access logs to track information requests, employee and document names and the dates documents are charged out and returned.

IA was informed that access to this locked room was restricted to the members of the BLMO who are well aware of the program requirements. A sticker reading "Bruce Power Ring Fenced Material" "Confidential and Restricted" "Do not copy &/or distribute further" is placed on the MHCR binder before it is handed out on request to authorized person(s). Document issue and return status is however, informally tracked through e-mail.

Potential root cause and impact

Root Cause:

Management believed that the access controls in the BLMO locked room were sufficient.

Impact:

- Potential violation of OPG's Generation License conditions that could lead to revocation of OPG's license;
- RF records stored at non RF designated facilities may not be subject to the required rigor and control requirements resulting in unauthorized access and/or distribution of RF information.

| Recommendation(s) | Management Action Plan | Responsible & Date of Implementation |
|--|--|--|
| The BPRF Administration team together with the BMLO team should perform a full review of records retained at the BLMO locked room and validate if other sensitive RF records are maintained at this facility; and Assess if RF records are required to be maintained at this location. If yes, officially designate BLMO as a RF location and implement RF document management controls. If not, move MHRC to the designated RF storage location. | The BPRF administration team and the BMLO team have performed a review of records retained at the identified location. The MHCR is the only BPRF-related record maintained at this facility. The BPRF administration team and the BMLO team have confirmed that the BPRF related record will continue to be maintained at the current facility which is a locked facility with appropriate access controls in place. The BPRF administration team will work with the BMLO team to assess if there are any further controls or other records management requirements that may need to be put in place. | Shelley Tucker Senior Manager Information Management and Program Authority Target Completion Date: 1. Completed. 2. Assess gaps: June 15, 2015. 3. Implement recommendations: October 15, 2015 (conditional on action complexity, cost, etc. |

3. No formal tracking that monthly staff list reviews were performed completely and consistently.

Moderate

The OPG-PROC-0002 *Bruce Power Ring Fenced Information* specifies that a Staff List (the "List") of employees who require access to ring fenced information is required to be in place. Members on the List are authorized to access RF information on a need-to-know basis. Changes to the List should be reported upon receipt of the BPRF Administrator's monthly reminder notice.

IA interviewed four Group Contacts and two LOB Contacts responsible for the review and noted the following:

- Monthly review requests of the List are sent to ten BPRF designated Group Contacts, who may then
 delegate this task to others. The review may then be delegated further down the organization several times.
 The staff performing the review may provide updates directly to the BPRF coordinator or to others within their
 organization. There was no tracking mechanism in place to ensure the completeness of the List review at
 either the group or program level;
- One Contact reviewed the List based on the OPG organization chart rather than on business need.

For further details on the exceptions, refer to Appendix B: Details of Testing Exceptions - Finding 3.

Potential root cause and impact

Root Cause:

- There is no defined procedure to track the completeness of the List review; and
- OPG-PROC-0002 does not specify how the monthly staff List review should be performed.

Impact:

Changes required to the List may not be accurately reported resulting in unauthorized access to RF information.

| Recommendation(s) | Management Action Plan | Responsible & Date of Implementation |
|--|--|---|
| Hold each Group Contact accountable for the completeness of the review of their designated sub-groups and provide consolidated requests for additions and removals to the BPRF coordinator; Implement formal tracking of accountabilities for review within the Group; and Clarify the monthly review requirements in OPG-PROC-0002 and communicate these to impacted employees. | BPRF Administration Team will incorporate into the process a formal Group Contact acknowledgement of responsibilities / accountabilities as per the BPRF governance. BPRF Administration Team will prescribe a process of how the Group Contacts will communicate and collect responses in their LOB with the goal of improving overall completeness of the BPRF List review activities. The BPRF Administration Team will review and clarify the BPRF review activities in OPG-PROC-0002. Tied to 3.1 and 3.2 in terms of timing. A revision to OPG-PROC-0002 will be included in this action. | Shelley Tucker Senior Manager Information Management and Program Authority Target Completion Date: 1. June 15, 2015. 2. May 15, 2015. 3. June 15, 2015. All activities above will be synchronized and carried out at the same time. 4. October 15, 2015. |

4. Employees terminated or on leave were not removed timely from the Ring Fence.

Low

The OPG-PROC-0002 *Bruce Power Ring Fenced Information* specifies that staff changes, including terminations should be notified no later than the end of the month following the effective date of the change. Access rights to the BPRF system, Curator, should be promptly removed for BPRF members no longer on the List.

IA sampled 15 terminated employees and noted the following:

- One employee's RF access was removed from the Staff List seven months after the termination date; and
- One employee's Curator access was removed four months after the employee was removed from the Staff
 List. Since there was no change in the role / department that could result in the employee benefiting from
 access to commercially sensitive RF information, the impact is considered minimal.

Similar findings were also noted in the 2013 BPRF Audit. (Refer to Appendix A: 2013 BPRF Audit Findings and Remediation Status).

For further details on the exceptions, refer to Appendix B: Details of Testing Exceptions - Finding 4.

Potential root cause and impact

Root Cause:

Reviewers did not report staff changes timely to the BPRF coordinator which lead to the oversight.

Impact:

- If system access is not removed timely, there is an increased risk of unauthorized access, use and/or distribution of ring-fenced information; and
- Potential violation of OPG's Generation License conditions which could lead to revocation of OPG's Generation License.

| Recommendation(s) | Management Action Plan | Responsible & Date of Implementation |
|---|---|--|
| The BPRF Administration team should reinforce the requirements of timely removal of RF access for terminated and on-leave employees to Group and System Contacts as part of the monthly email communication; Removals to the RF should be reviewed as part of the HR termination staff checklist; and RF designated System Contacts should ensure that the most recent List is compared when performing the system user access reviews. Management should also consider changing the frequency of the system access review to monthly instead of quarterly. | The BPRF Administration Team will review and clarify the BPRF review activities in OPG-PROC-0002. Tied to finding 3 in terms of timing. A revision to OPG-PROC-0002 will be included in this action. The BPRF Administration Team will perform a quarterly review comparing the HR termination and long term absence reports to the Staff List. The review frequency will be reassessed after a year. | Shelley Tucker Senior Manager Information Management and Program Authority Target Completion Date: October 15, 2015. |

5. Documents and records stored at Kipling and within the Curator system no longer contain current ring-fenced information.

Low

The *OPG-PROC-0002 Bruce Power Ring Fenced Information* specifies that the ring-fence information exclusively consists of BP outage information not already in the public domain and unit condition information.

Through inspection and enquiry, it was noted that the Kipling storage location and the Curator system store numerous stale and legacy BPRF records that are no longer required to be classified as sensitive RF information.

We have been informed that a project is currently underway to reassess the classification and disposition of old RF information stored at Kipling location and the Curator system in line OPG governance requirements.

Potential root cause and impact

Root Cause:

Documents and records stored at Kipling and within the Curator system are not periodically reviewed for destruction.

Impact:

Stale records occupy storage space that could be used for other purposes.

| Recommendation(s) | Management Action Plan | Responsible & Date of Implementation |
|--|--|---|
| Together with the record owners, the BPRF Administration team should continue to assess the records currently kept at the RF designated facility or system for appropriate RF classification and if necessary disposal in line with the OPG Governance requirements. | This is legacy BPRF information and poses no current risk other than taking up space. No action as this retention clean up activity will be managed via the Records Vault Optimization initiative lead by CIO - Information Management Services. CIO has reviewed /approved an executable plan on March 13, 2015 | Shelley Tucker Senior Manager Information Management and Program Authority Target Completion Date: N/A |

APPENDIX A - 2013 BPRF AUDIT FINDINGS AND REMEDIATION STATUS

| # | Finding and Risk Rating | Recommendation | Management Action Plan | Remediation Status |
|----|--|--|---|---|
| 1. | Risk – High System Contacts had not enforced access controls over ring-fenced systems in a consistent manner. | System Contacts should enforce proper access controls over ring-fenced systems, as per OPG-PROC-0002 – Section 1.6.2. Recommended actions included: Reinforce roles and responsibilities with key stakeholders, clarify expectations and control procedures; Make arrangements with IT to have user access lists for all ring-fenced systems provided on a recurring basis; Establish an attestation process that requires System Contacts to provide confirmation on the completion of control activities, and gives the BPRF Administrator authority to escalate for lack of responses; and Monitor adverse trends for triggers of escalation. | 1. Identify owner for each system or folder to allow for escalation in case required. 2. Update quarterly reminder email to require positive confirmation from System Contacts for completion of periodic review activities, with follow-up and escalation process for lack of responses. 3. Meet with System Contacts to reinforce expectations. | Although management action items were implemented, they did not operate effectively as designed. A similar issue was noted in this audit where Curator access for one staff was not timely removed by the System Contact. Refer to Section 2.0 Audit Findings – finding 4: Employees terminated or on leave were not timely removed from the Ring Fence. |
| 2. | Risk - Medium The Bruce Power Ring-Fence Staff List was not updated to reflect necessary membership changes in a timely manner. | Group Contacts should perform the required monthly Staff List review, as per OPG-PROC-0002 – Section 1.6.1. Recommended actions included: Reinforce roles and responsibilities with key stakeholders, clarify expectations and control procedures; Establish an attestation process that requires Group Contacts to provide confirmation on the completion of control activities, and allows the BPRF Administrator to escalate for lack of responses; and Monitor adverse trends for triggers of escalation. | Update monthly reminder email to require response from Group Contacts even if there were no changes, with defined follow-up and escalation process Clearly define and communicate Roles & Accountabilities in a face to face meeting | Although management action items were implemented, they did not operate effectively as designed. A similar issue was noted in this audit where RF access was not removed for one staff until seven months after the termination date. Refer to Section 2.0 Audit Findings – finding 4: Employees terminated or on leave were not timely removed from the Ring Fence. |

APPENDIX B - DETAILS OF TESTING EXCEPTIONS

Finding 1 - Contractors who did not undertake the BPRF training

| No. | Contractor Last | | Access Between | Access Between |
|-----|-----------------|------------|-----------------------------|---------------------------|
| | Name | First Name | February 28 & June 30, 2013 | January 1 & June 30, 2014 |
| 1 | | | ✓ | ✓ |
| 2 | | | ✓ | N/A |
| 3 | | | N/A | ✓ |
| 4 | | | ✓ | ✓ |
| 5 | | | N/A | ✓ |
| 6 | | | ✓ | ✓ |
| 7 | | | ✓ | ✓ |
| 8 | | | ✓ | ✓ |
| 9 | | | ✓ | ✓ |
| 10 | | | N/A | ✓ |
| 11 | | | N/A | ✓ |
| 12 | | | ✓ | ✓ |
| 13 | | | N/A | ✓ |
| 14 | | | √ | N/A |
| 15 | | | ✓ | ✓ |
| 16 | | | N/A | ✓ |
| 17 | | | ✓ | ✓ |
| 18 | | | ✓ | ✓ |
| 19 | | | ✓ | ✓ |
| 20 | | | ✓ | ✓ |
| 21 | | | ✓ | ✓ |
| 22 | | | ✓ | ✓ |
| 23 | | | ✓ | ✓ |
| 24 | | | ✓ | N/A |
| 25 | | | ✓ | ✓ |
| 26 | | | ✓ | ✓ |
| 27 | | | ✓ | ✓ |
| 28 | | | N/A | ✓ |

Finding 1 - Missing training record for nuclear contractor

| OPG Organization | Contractor Name | Company | Duration of Access |
|---------------------|-----------------|---------|------------------------------|
| IMS | | | Jan. 1, 2013 - Dec. 31, 2014 |

Finding 1 - Reinstated employees who did not take refresher training

| Employee No. | Initial training date | Date removed from Staff List | Date re-entered into Staff List |
|--------------|-----------------------|------------------------------|---------------------------------|
| | 5/18/2012 | 9/04/2012 | 9/24/2013 |
| | 12/3/2012 | N/A | 3/3/2014 |

Finding 1 - Contractor who did not resubmit the Contractor Access Request Form in 2014

| Department | Contractor Name | Company | Duration of Access |
|------------|-----------------|---------|-------------------------------|
| Law | | | Jul. 16, 2013 – Dec. 31, 2015 |

Finding 3 – Lack of formal tracking of review of Staff List

| | i maining of Laure of formal tracking of feview of Staff List | | | | | |
|-----|---|---|--|--|--|--|
| No. | Employee Interviewed | Exception Noted | | | | |
| 1 | BPRF Coordinator | This contact does not track if all required reviewers have responded. | | | | |
| 2 | Nuclear Group Contact | This contact does not track review results because the layer below does not | | | | |
| | · | report back to this contact. | | | | |
| 3 | Finance Group Contact | This contact does not track if all the required reviewers have responded. | | | | |
| 4 | LOB contact 2 - | This contact does not track review results because the layer below does not | | | | |
| | (Admin Assistant) | report back to this contact. | | | | |
| | within Nuclear group | | | | | |
| 5 | LOB contact 3 - | This contact does not track review results because the layer below does not | | | | |
| | (Admin Assistant) | report back to this contact. | | | | |
| | within Nuclear group | | | | | |
| 6 | LOB contact 4 - | This reviewer sends review results to the BPRF coordinator rather than the | | | | |
| | (Admin Assistant) | layer above to facilitate tracking. | | | | |
| | within Nuclear group | | | | | |
| 7 | LOB contact 1 - | This reviewer reviewed the List based on the OPG organization chart rather | | | | |
| | (Admin Assistant) | than based on business need. The results are sent to the BPRF coordinator | | | | |
| | within Nuclear group | rather than the layer above to facilitate tracking. | | | | |

Finding 4 - Delay in removal of employee from the Staff List

| Employee Number | Last Work Date provided by HR | Date the employee was removed from Staff List |
|--------------------|-------------------------------|---|
| | 12/19/2013 | 7/3/2014 |

Finding 4 - Delay in removal of employee's access from Curator system

| I maining ! Doildy in romo varior omproyee o accesso from our accessory | | | | | |
|---|---|----------------|--|--|--|
| Employee Number | Date the employee was removed from Staff List | Removal reason | Date access removed from Curator | | |
| | 09/24/2014 | On leave | Still had access to Curator as per the Jan 2015 report (as of the audit fieldwork date). | | |

APPENDIX C - RISK RATING DEFINITIONS FOR AUDIT FINDINGS

Ratings are derived through professional judgment by the audit team and discussion with management. The ratings for individual control findings are outlined below.

| Rating | Definition |
|------------------|---|
| High Risk * | The finding presents a risk that could potentially have severe/major impact on financial sustainability (≥ 5M), operational excellence, project excellence, safety, environment and reliability, reputation, regulatory relationship, or compliance with laws and regulations. |
| Moderate Risk | The finding presents a risk that could potentially have a moderate impact on financial sustainability (\$500K to <\$5M), operational excellence, project excellence, safety, environment and reliability, reputation, regulatory relationship, or compliance with laws and regulations. If not remediated, this risk could escalate to high risk. |
| Low Risk | The finding could potentially have a minor impact on financial sustainability (<\$500K), operational excellence, project excellence, safety, environment and reliability, reputation, regulatory relationship, or compliance with laws and regulations. Recurring "low risk" findings may be elevated to medium risk status. |

^{*} High risk findings are reported to the CEO and the Audit & Finance Committee of the Board.

OVERALL REPORT RATING SCALE

An overall report rating has been assigned as an indication of the overall design, existence and effectiveness of the components of the internal control structure that was subject to the internal audit. The internal audit rating should be considered in conjunction with the definitions noted above.

- Effective: Control and risk management practices provide reasonable assurance that business process objectives will be achieved and may include minor improvements and/or opportunities for improvement.
- Generally Effective: Control and risk management practices require more than minor but less than significant improvements to provide reasonable assurance that business process objectives will be achieved.
- Requires Improvement: Control and risk management practices require significant improvements in high risk and/or core areas to provide reasonable assurance that business process objectives will be achieved.
- Not Effective: Control and risk management practices are not designed and/or are not operating effectively.