UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

July 22, 2011

Mr. Michael J. Pacilio
Senior Vice President, Exelon Generation Company, LLC
President and Chief Nuclear Officer (CNO), Exelon Nuclear
4300 Winfield Road
Warrenville IL 60555

SUBJECT: BYRON STATION, NRC EVALUATION OF CHANGES, TESTS, OR EXPERIMENTS AND PERMANENT PLANT MODIFICATIONS BASELINE INSPECTION REPORT 05000454/2011009; 05000455/2011009(DRS)

Dear Mr. Pacilio:

On June 16, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed a combined baseline inspection of the Evaluation of Changes, Tests, or Experiments and Permanent Plant Modifications at the Byron Station. The enclosed inspection report documents the inspection results, which were discussed on May 20, 2011, with Mr. T. Tulon and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of the inspection, three NRC-identified findings of very low safety significance were identified. The findings involved violations of NRC requirements. However, because these violations were of very low safety significance, and because the issues were entered into your corrective action program, the NRC is treating the issues as Non-Cited Violations (NCVs) in accordance with Section 2.3.2 of the NRC's Enforcement Policy.

If you contest the subject or severity of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Byron Station. In addition, if you disagree with the cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector at the Byron Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any), will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Robert C. Daley, Chief
Engineering Branch 3
Division of Reactor Safety

Docket Nos. 50-454; 50-455
License Nos. NPF-37; NPF-66

Enclosure: Inspection Report No. 05000454/2011009; and 05000455/2011009(DRS)
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos:	50-454; 50-455
License Nos:	NPF-37; NPF-66
Report Nos:	05000454/2011009; 05000455/2011009(DRS)
Licensee:	Exelon Generation Company, LLC
Facility:	Byron Station, Units 1 and 2
Location:	Byron, IL
Dates:	May 2, 2011 through June 16, 2011
Inspectors:	Z. Falevits, Senior Reactor Engineer (Lead) R. Winter, Reactor Engineer L. Jones, Reactor Engineer
Inspector in Training:	I. Hafeez
Approved by:	R. C. Daley, Chief Engineering Branch 3 Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000454/2011009; 05000455/2011009(DRS); 05/02/2011 – 6/16/2011; Byron Station, Units 1 and 2; Evaluation of Changes, Tests, or Experiments and Permanent Plant Modifications.

This report covers a two-week announced baseline inspection on evaluations of changes, tests, or experiments and permanent plant modifications. The inspection was conducted by three regional based engineering inspectors. Three (Green) Non-Cited Violations (NCVs) were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red), using Inspection Manual Chapter 0609, "Significance Determination Process (SDP)." Findings for which the SDP does not apply, may be (Green), or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealed Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion X, "Inspection," for the failure to ensure that independent quality verification (QV) inspection hold points (HPs) were specified in work orders (WOs) used during Raychem splicing activities on a safety-related instrumentation cable, in the containment. Specifically, during replacement of the failed RCS Loop 1B Wide-Range, Hot-Leg (resistance temperature detector) RTD 1TE-RC023A in 2006 and in 2008, the licensee used electrical Raychem splices to connect the RTD leads to its cable without including the required QV inspection HPs in the associated WO instructions. Consequently, the QV independent inspections were not performed as required by Exelon corporate Nuclear Oversight (NO) and Maintenance procedures and by the Quality Assurance Topical Report (QATR). Subsequently, the licensee initiated corrective actions to rework the Raychem splice at the next window of opportunity and to communicate and reinforce the importance of inclusion of QV HP inspections, when required. This issue was entered into the licensee's corrective action program (CAP) under Issue Reports (IRs) 01226961, 01214766, 01217502 and 01218406.

  The failure to ensure that independent QV HP inspections were included in WO instructions as required by Exelon Corporate procedures and the QATR was a performance deficiency. This performance deficiency was more than minor because, if left uncorrected, it would lead to a more significant safety concern in that the failure to independently verify quality attributes in safety-related equipment could involve an adverse impact to plant equipment. The inspectors concluded that this finding was associated with the Mitigating Systems Cornerstone. This performance deficiency was determined to have very low safety significance in Phase I of the SDP, since it was confirmed to involve a lack of required QV HPs for this Raychem splicing activity that did not result in a loss of operability or functionality. The inspectors determined that the underlying finding had a cross-cutting aspect in the area of Human Performance, Decision Making, because the licensee did not have an effective systematic process for obtaining interdisciplinary reviews of proposed maintenance work instructions to

determine whether independent QV HP inspections were appropriately specified and implemented to assure plant safety. [H.1(a)] (Section 1R17.2.b)

- Green. The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," related to inadequate control of installed temporary scaffolds. Specifically, licensee's procedure for the installation, modification, and removal of scaffolds was not followed, on a routine basis, for temporary scaffolds that remained in the plant for greater than 90 days. This could impact the operability or availability of plant system. The licensee entered this issue into the CAP as IR 01212656. Corrective actions for this issue included an investigation as to why procedure adherence issues with regard to scaffolds continue to occur and an extent of condition review of similar plant programs.

  The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix E, "Examples of Minor Issues." Specifically, the inspectors concluded that this issue was similar to the more than minor criteria established in Example 4.a, "Insignificant Procedural Errors," since the licensee failed to perform the required engineering evaluation for the temporary installed scaffolding that remained in the plant for more than 90 days. Therefore, this performance deficiency also impacted the Mitigating Systems Cornerstone objective of protection against external events (seismic events). The finding was of very low safety significance because there was not a confirmed loss of operability of any mitigating system component. The inspectors determined that the underlying finding had a cross-cutting aspect in the area of Human Performance, Decision-Making, because the licensee did not make the appropriate safety or risk significant decisions by failing to utilize the systematic scaffolding construction process to ensure adequate quality and, therefore, adequate safety was maintained when scaffolds remained installed for greater than 90 days. [H.1(a)]. (Section 4OA2.b.(1))

- Green. The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to correctly translate applicable design basis (calculations) into specifications. Specifically, the licensee failed to take into account fuel oil consumption at an increased frequency of 61.2 Hz in their EDG loading calculations which resulted in non-conservative Technical Specifications. The licensee entered this finding into their corrective action program as IR 01226844 and implemented actions to evaluate incorporation of the EDG frequency administrative limits into applicable site operating procedures to ensure an adequate supply of fuel was available.

  The inspectors determined that this finding was more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of design control and affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee failed to account for the increased fuel oil consumption resulting from operation at a higher EDG frequency variation of 61.2 Hz as allowed by TS 3.8.1 and room temperature of up to 120°F in their EDG loading calculations. Therefore, the licensee did not ensure that the minimum fuel oil level in the storage tanks, as required per TS 3.8.3, was adequate to support the EDGs' 7-day mission time. This finding had a cross-cutting aspect in the area of Problem Identification and Resolution

Corrective Action Program because the licensee did not thoroughly evaluate the EDG fuel oil consumption when considering EDG frequency variation. Specifically, the licensee failed to translate applicable design bases into specifications, which resulted in non-conservative TS. [P.1(c)] (Section 4OA2.b.(2))

B. Licensee-Identified Violations

No violations of significance were identified

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R17 Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications (71111.17)

.1 Evaluation of Changes, Tests, or Experiments

a. Inspection Scope

From May 2 through June 16, 2011, the inspectors reviewed six evaluations performed pursuant to 10 CFR 50.59 to determine if the evaluations were adequate and that prior NRC approval was obtained as appropriate. The inspectors also reviewed 19 screenings where licensee personnel had determined that a 10 CFR 50.59 evaluation was not necessary. The inspectors reviewed these documents to determine if:

- the changes, tests, or experiments performed were evaluated in accordance with 10 CFR 50.59 and that sufficient documentation existed to confirm that a license amendment was not required;
- the safety issue requiring the change, tests or experiment was resolved;
- the licensee conclusions for evaluations of changes, tests, or experiments were correct and consistent with 10 CFR 50.59; and
- the design and licensing basis documentation was updated to reflect the change.

The inspectors used, in part, Nuclear Energy Institute (NEI) 96-07, "Guidelines for 10 CFR 50.59 Implementation," Revision 1, to determine acceptability of the completed evaluations and screenings. The NEI document was endorsed by the NRC in Regulatory Guide 1.187, "Guidance for Implementation of 10 CFR 50.59, Changes, Tests, and Experiments," dated November 2000. The inspectors also consulted Part 9900 of the NRC Inspection Manual, "10 CFR Guidance for 10 CFR 50.59, Changes, Tests, and Experiments."

This inspection constituted six samples of evaluations and 19 samples of changes as defined in IP 71111.17-04.

b. Findings

No findings of significance were identified.

.2 Permanent Plant Modifications

a. Inspection Scope

From May 2 through June 16, 2011, the inspectors reviewed nine permanent plant modifications that had been installed in the plant during the last three years. This review included in-plant walkdown for portions of the following installed modifications: replacement of environmentally qualified (EQ) Raychem electrical splices in the safety-related cable; AFW cross-tie modifications; Diesel driven AFW Diesel tanks; the installation of a more accurate level/pressure switch for the EDG oil storage tank; and raising the diesel generator air pressure to prevent test mode trips. The modifications were selected based upon risk significance, safety significance, and complexity. The inspectors reviewed the modifications selected to determine if:

- the supporting design and licensing basis documentation was updated;
- the changes were in accordance with the specified design requirements;
- the procedures and training plans affected by the modification have been adequately updated;
- the test documentation as required by the applicable test programs has been updated; and
- post-modification testing adequately verified system operability and/or functionality.

The inspectors also used applicable industry standards to evaluate acceptability of the modifications. The list of modifications and other documents reviewed by the inspectors is included as an Attachment to this report.

This inspection constituted nine permanent plant modification samples including six calculations as defined in IP 71111.17-04.

b. Findings

Failure to Specify and Perform Required Independent Quality Verification Hold Point Inspections

Introduction: The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion X, “Inspection,” for the failure to ensure that independent quality verification (QV) hold point (HP) inspections were specified in work orders (WOs) and performed during replacement of environmentally qualified (EQ) Raychem electrical splices in the safety-related cable for (resistance temperature detector) RTD 1TE-RC023A.

Description: During review of a modification to replace the failed Unit 1 RCS loop wide range RTD 1TE-RC023A, the inspectors noted that the electrical work planner erroneously classified the RTD replacement and Raychem splice maintenance activity as Routine “like for like” replacement, instead of “Non-Routine,” which did not require QV independent verification. Specifically, the licensee failed to ensure that independent QV

inspection HPs were specified in WO 966602 03,"1B RC WR Hot Leg Transmitter Spiking," April 8, 2008, and in WO 966290 04, "1B T Hot (Wide Range) Failed High," October 16, 2006, used during replacement of EQ Raychem electrical splices in the safety-related cable for RTD 1TE-RC023A, located in the containment. Consequently, the mandatory QV independent inspections were not performed as required by the Exelon corporate nuclear oversight (NO) and maintenance procedures and by the Quality Assurance Topical Report (QATR). The licensee used peer checks (PCs) performed by the electricians to verify that the installation steps in the WOs were performed in accordance with the procedure steps; however, the inspectors determined that the required QV independent HP verifications to ensure that the specific steps for the cable splice were properly performed were not specified nor performed. The Raychem splice performed using WO 966290 04, in 2006 was done in support of a temporary change (TCC), which was removed and replaced with another Raychem splice in 2008, using WO 966602.

In response to the inspector's question, the licensee stated that a QV concurrent verification is an independent activity and must be performed at the same time the Raychem splice is being applied since it would not be possible or appropriate for the action to be completed before it was verified. The QV HPs are to be verified independently and must be completed before work can proceed. The QV independent HP verifications, as required by the Exelon Corporate procedures and the QA program, could not be omitted or replaced by electing use of electrical maintenance personnel. The inspectors noted that a PC was not necessarily performed independently at the same time the activity was being performed.

Exelon Corporate procedure NO-AA-300-001-1001, "Nuclear Oversight Independent Inspection Plan," Revision 10, which defined the required hold points, was used to perform the splicing activity. This procedure defined Non-Routine Maintenance as, "Maintenance activities where an approved plant procedure does not exist; or infrequently performed or first time evolution as identified by the Work Planner/Analyst, or activities associated with design changes. Activities requiring inspection per this inspection plan shall be performed by certified QV independent inspectors." The procedure also defined routine maintenance as, "Maintenance activities, which do not meet the non-routine maintenance definition as described in this inspection plan. If routine maintenance activities require inspection per this inspection plan it shall be performed by certified QV independent inspectors." The procedure required that Raychem splicing maintenance activity be classified as non-routine, which would have required QV involvement and HP verifications, because it involved replacement of the Raychem splice on the cable to the failed RTD. The matrix in Attachment 1 of the procedure provided the specific QV HP requirements for cable Raychem splices and referenced use of Exelon corporate procedure MA-MW-726-022 "Electrical Cable Termination and Inspection," Revision 2, for electrical terminations and cable splices activities. The inspectors noted that the electricians used the work instructions provided by the electrical work planner to install the Raychem heat shrink/butt splice, however, procedure MA-MW-726-022, which contained the specific requirements for safety-related and EQ electrical terminations and the required inspections was not used during this activity.

The licensee's QATR contained a definition of a HP and required that inspection personnel shall:

- not perform independent inspections on any work that they have performed or directly supervised;

- have their qualifications approved by NOS prior to performing inspection activities;

- report to the Management Position responsible for site NOS when performing Quality Verification functions, even though they may functionally report to another organization for their other assigned activities; and

- be subject to audit by NOS.

Section 2.6, "Independent Verification," of the QATR stated that, "Independent verifications are conducted by qualified personnel using approved procedures. Characteristics to be verified and methods to be employed shall be specified. Verification results and unacceptable conditions identified shall be documented. Verifications shall be performed by persons other than those who performed or directly supervised the work being verified."

The inspectors reviewed the qualifications of the electricians that performed the Raychem splices and PC inspections and the QATR requirements. The inspectors determined that the electricians were qualified to N-AN-IM-209, "Splices and Terminations," but were not qualified to perform independent QV inspections which require NOS Level II Electrical Quality Verification Inspector certification meeting the requirements of ASME NQA-1 or equivalent such as ANSI N45.2.6.

The inspectors reviewed the corrective action database to verify if additional examples of missed QV verification inspections were identified and to determine if an adverse trend existed. During this review, the inspectors noted that IRs 01100282, 01095339, 01100631, 01101382, 01071041, 01106850 and 01182038 were issued in the past year to document a number of licensee identified missing QV hold point issues. For example, IR 01100282, "Identified Missing Hold Points," August 10, 2010, was initiated by NO to document that approximately 39 closed WO packages were installed in the field, without including the required QV hold points. The IR stated, in part, that prior to Revision 3 of the Engineering Change (EC) 338197, the WOs associated with replacement of three of the STS brand controllers were treated as modifications and required use of appropriate QV HPs. However, after Revision 3 of EC 338197 was issued, the associated WOs for the remaining 21 STS controllers were treated as Routine Maintenance instead of as a Modification and no QV HPs were included during their installations. Subsequently, design engineering reviewed Revision 3 of the EC and concluded that replacement of the remaining controllers could be performed via Routine Maintenance and not as a modification. An Apparent Cause Evaluation was performed as part of the corrective action to identify the causes and address the concerns identified in the IR. The cause of missing required HPs was mainly attributed to work planner knowledge gap, inattention to detail and inadequate review of the work packages. All assigned corrective actions to this IR had been closed as completed.

The inspectors also reviewed related industry operating experience information and noted that Byron Licensee Event Report (LER) 454/94007, “1B Wide Range Hot Leg RTD Indication Spiked Low and could not be Restored within LCO Time Limit,” was issued in July 1994, after declaring the 1B Wide Range Hot Leg RTD instrument circuit inoperable. The LER also documented a previous history of six similar instrument cable splice connection issues. The probable cause was determined to be a failed bolted lug type splice at the RTD pigtail and the field cable which goes to containment penetration. The LER stated that the RTD pigtail is a solid copper conductor and when the lug is crimped to it, it is difficult to get a good electrical connection. The Raychem splice is typically used for this application. These failures were believed to be caused by poor connection in the splice at the pigtail of the RTD located inside the containment.

The inspectors reviewed NUREG/CR-6788, “Evaluation of Aging and Qualification Practices for Cable Splices Used in Nuclear Power Plants,” September 2002. The NUREG stated that the importance of training, the proper engineering, and specification of splices for specific applications, and the proper installation of splice kits in accordance with manufacturer's instructions should be emphasized. A deficiency in any one of these areas can impact the aging degradation of the splice and adversely affect the performance of the splice during accident conditions.

After identification of this issue, the inspectors questioned the operability of the installed Raychem splice. To address the inspectors concern and provide reasonable assurance for operability the licensee reviewed the completed WO 966602 03 package, the process used to install the splice and the training and qualifications of the involved technicians. The licensee stated that the involved electrical technicians had been trained and qualified to perform the Raychem splice activity and that the installation of the heat shrink splice received a PC by another electrician. The licensee did not identify quality concerns with the workmanship or qualifications of the electricians and concluded that the splice installation was acceptable. After the exit, IR 01226961 was issued on June 9, 2011, and IR 01218406, was revised on June 13, 2011, to include planned corrective actions and provide reasonable assurance for operability until the Raychem splice is replaced at the next available work window. The inspectors had no immediate operability concerns based on the licensee’s reviews and commitment to replace the splice at the next available work window.

The inspectors also performed a field inspection in Fire Hazards Panel 1PL10J using Drawing 6E-1-4185 to verify portions of the as built configuration of the RTD instrument cable terminated on TB5. No concerns were noted.

Analysis: The inspectors determined that the failure to ensure that the appropriate QV HP inspections were included in safety-related work instructions and implemented as required by Exelon corporate procedures and the QATR was a performance deficiency. This performance deficiency was more than minor because, if left uncorrected, it would lead to a more significant safety concern in that the failure to independently verify and check quality attributes in safety-related equipment could involve an adverse impact to plant equipment. The inspectors concluded that this finding was associated with the Mitigating Systems Cornerstone because missed QV inspections during plant modifications could impact the availability, reliability, and capability of systems needed to respond to initiating events.

This performance deficiency was determined to have very low safety significance in Phase I of the SDP, since it was confirmed to involve a lack of required QV HPs for this Raychem splicing activity that did not result in a loss of operability or functionality.

The inspectors determined that the underlying finding had a cross-cutting aspect in the area of Human Performance, Decision Making, because the licensee failed to appropriately plan and coordinate work activities to ensure that required QV HPs are included in WO instructions. Specifically, the licensee did not have an effective systematic process for obtaining interdisciplinary reviews of proposed maintenance work instructions to determine whether independent QV HP inspections were appropriately specified and implemented to assure plant safety. (H.1(a))

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion X, "Inspection," requires in part, that licensees shall establish and execute a program for inspection to verify conformance with the documented instructions, procedures, and drawings for accomplishing activities affecting quality. It further requires that, if mandatory inspection hold points are required, the specific hold points shall be indicated in appropriate documents and such inspections shall be performed by individuals other than those who performed the activity being inspected.

Exelon corporate procedure NO-AA-300-001-1001, "Nuclear Oversight Independent Inspection Plan," Revision 10, dated August 24, 2007, specified in Attachment 1, that performance of Raychem splices was a non-routine maintenance activity which required mandatory inspection HPs of: (1) Butt/Lug/Parallel splice proper size and type, surfaces clean; (2) Heat shrink tubing/shims/or tape properly applied; and (3) Minimum bending/training radius, to verify and ensure quality. In addition, the Raychem splice HP requirements were also specified in Exelon maintenance procedure MA-MW-726-022, "Electrical Cable Termination and Inspection," Attachment 1, Revision 2.

Exelon QATR NO-AA-10, Revision 10, contained a definition of hold points (HPs) and required, in part, that HPs be completed before work can proceed. The QATR stated that, "Independent verifications are conducted by qualified personnel using approved procedures. Characteristics to be verified and methods to be employed shall be specified. Verification results and unacceptable conditions identified shall be documented. Verifications shall be performed by persons other than those who performed or directly supervised the work being verified."

Contrary to the above, on October 15, 2006 and on April 2, 2008, WO 00966290-04 and WO 00966602-03, respectively, were used to perform Raychem splicing activities on a safety-related instrumentation cable of a failed RTD without including the mandatory QV HP inspections. Because this violation was of very low safety significance and was entered into the licensee's corrective action program, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. (NCV 05000454/2011009-01; 05000455/2011009-01; Failure to Specify and Perform Required Independent Quality Verification Hold Point Inspections).

4OA2 Identification and Resolution of Problems

.1 Routine Review of Condition Reports

a. Inspection Scope

During this inspection, the inspectors reviewed selected corrective action documents and licensee self assessments that identified or were related to 10 CFR 50.59 evaluations and permanent plant modifications. The inspectors reviewed these documents to evaluate the effectiveness of corrective actions related to permanent plant modifications and evaluations for changes, tests, or experiments issues. In addition, corrective action documents written on issues identified during the inspection were reviewed to verify adequate problem identification and incorporation of the problems into the corrective action system. The specific corrective action documents that were sampled and reviewed by the team are listed in the attachment to this report.

b. Findings

(1) Failure to Follow Procedure Requirements for Temporary Scaffolds that Remain in Place for Over 90 Days

Introduction: The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," related to an inadequate quality review of temporary constructed scaffolds that remained installed in the plant for over 90 days. Specifically, the licensee routinely failed to follow procedural requirement and perform the required 50.59 reviews and engineering evaluations to determine if the installed temporary scaffolds needed to be removed or made permanent prior to reaching 90 days in-service.

Description: The inspectors reviewed the licensee's 50.59 program implementation and related IRs initiated to document temporary scaffolds that remained in place for greater than 90 days without performing the required 50.59 reviews and engineering evaluation. These evaluations were required by procedures to determine if the installed temporary scaffolds should be removed or become a permanent installation that would not impact the operability or availability of plant system.

The inspectors reviewed IR 01180251, "Scaffold Left Installed for Over 90 days Without a 50.59 Review" dated February 25, 2011. This IR noted that IR 737863, dated February 18, 2008, identified that 11 temporary scaffolds had exceeded the 90 day limit for installation but were left installed for approximately 150 days without performing the required 50.59 and engineering evaluations. The IR further stated that no overdue scaffolds have been identified since April 6, 2009. In response to the inspector's inquiry, the licensee conducted another search of temporary scaffolding related IRs issued after April 6, 2009, and identified that IR 1123306, October 7, 2010, IR 1189673, March 19, 2011, and IR 1197937, April 5, 2011, were issued to document additional overdue temporary scaffolds. Subsequently, the licensee issued IR 01212656 on May 6, 2011, to document that a broader issue with adherence to scaffolding procedures exists since overdue scaffolds were still occurring.

The inspectors noted that a number of additional IRs have been issued to document inadequate control and oversight of installed temporary scaffolding attributed to failure to adherence to scaffold procedural requirements. Examples identified since 2010 included:

- A scaffold was found in containment that had not been entered in the scaffold control logs and was not being tracked;

- A number of instances where scaffolds were left installed >90 days with neither a 50.59 review nor engineering action to make the installation a permanent modification;

- A status review could not locate a scaffold in the plant because the scaffold was removed from one location and assembled in another location in the plant with same tag number. The associated documentation was not completed as required.

The inspectors reviewed Exelon corporate procedure MA-AA-716-025, "Scaffold Installation, Modification, and Removal Request Process," Revision 9. Step 2.14 of the procedure defined a temporary scaffold as follows:

> "Non-Permanent Scaffold – Temporary access or support structures utilizing scaffold material erected in support of Maintenance or Operations activities that are to be removed at the completion of the activities. These temporary access structures are **not** intended to be left in place for more than 90 days of power plant operations."

Additionally, Step 3.6 of the procedure required the following:

> "Scaffold Coordinator/Designee – Is responsible for the coordination of erection and removal of all scaffolds on site. Maintaining a log or electronic equivalent of the status of all scaffolds, and reviewing the log to ensure that any scaffolds approaching their 90 day limit are removed or converted to a permanent scaffold or requesting that an individual 10 CFR 50.59 review be performed for the individual scaffold required to be left in place beyond 90 days."

The inspectors questioned the station's procedural requirements and the proposed licensee corrective actions to correct the IRs identified deficiencies. The inspectors interviewed scaffolding and engineering staff and noted that there was no specific requirement that temporary scaffolds be disassembled prior to exceeding an in-service life of 90 days. The inspectors concluded that the licensee routinely failed to follow Step 3.6 and had not met the intent of Step 2.14 of Station Procedure MA-AA-716-025, Revision 9. Also, the corrective actions taken by the licensee in the last three years to address the issues identified in the IRs were ineffective in preventing re-occurrence and ensuring adherence to scaffolding procedure required actions. Subsequently, the licensee's corrective actions included investigation as to why issues with procedure adherence with regard to scaffolds continue to occur and the initiation of an extent of condition/benchmark of similar programs to determine whether those programs have the same issues.

Concerning a related issue, Exelon procedure CC-AA-201, "Plant Barrier Control Program," Revision 8, stated if the 90-day time clock is applicable, then ensure that the impairment is removed or a 50.59 is prepared prior to the 90-day time clock. Similar problems relating to ensuring that existing plant barrier impairments (PBIs) are removed or a 50.59 is prepared prior to exceeding the 90 day specified time clock were identified by the licensee in 2009 and 2010 in IRs 01013008, 01092808, 00802171, 00836471, 836601 and 00872156.

The inspectors also reviewed nuclear operating experience information to ensure that lessons-learned from other Exelon plants had been incorporated into the licensee's corrective action process. The inspectors noted that similar scaffolding related issues have been identified by the NRC at the Braidwood Station; however, Byron staff was not aware of the adverse trend identified at Braidwood.

Analysis: The inspectors identified that failure to routinely follow procedures, MA-AA-716-025, as related to the control of temporary scaffolding was contrary to 10 CFR Part 50, Appendix B, Criterion V, "Procedures," and was a performance deficiency. The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix E, "Examples of Minor Issues." Specifically the inspectors concluded that this issue was similar to the more than minor criteria established in Example 4.a, "Insignificant Procedural Errors," since the licensee failed to perform the required engineering evaluation for the temporary installed scaffolding that remained in the plant for more than 90 days. Therefore, this performance deficiency also impacted the Mitigating Systems Cornerstone objective of protection against external events (i.e., seismic events).

This performance deficiency was determined to have very low safety significance (Green) in Phase I of the SDP, since it was confirmed to involve a lack of required engineering evaluations for temporary scaffolding that remained in the plant for over 90 days that did not result in a loss of operability or functionality.

The inspectors determined that the underlying finding had a cross-cutting aspect in the area of Human Performance, Decision-Making; because the licensee failed to effectively utilize the scaffolding and PBI process. Specifically, the licensee had not made the appropriate safety-significant or risk significant decisions by failing to utilize the systematic scaffolding construction process to ensure adequate quality and, therefore, adequate safety was maintained when scaffolds remained installed for greater than 90 days. [H.1(a)].

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality be prescribed by instructions, procedures, or drawings, of a type appropriate to the circumstance and shall be accomplished in accordance with these instructions, procedures, or drawings.

Step 3.6 of Exelon Corporate procedure MA-AA-716-025, "Scaffold Installation, Modification, and Removal Request Process," Revision 9, required that temporary constructed scaffolds be removed or converted to a permanent scaffold or an individual 10 CFR 50.59 review be performed for the individual scaffold required to be left in place beyond 90 days.

Contrary to the above, from April 6, 2009 to May 6, 2011, the licensee failed to follow Step 3.6 of quality procedure, MA-AA-716-025, and ensure that temporary constructed scaffolds do not remain in the plant for greater than 90 days without a 10 CFR 50.59 evaluation or the scaffold is converted to a permanent scaffold. Because this violation was of very low safety significance and was entered into the licensee's corrective action program (IR 1212656), this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. (NCV 05000454/2011009-02; 05000455/2011009-02; Failure to Follow Procedure Requirements for Temporary Scaffolds that Remain in Place for Over 90 Days).

(2) EDG Usable Fuel Calculations Failed to Consider Appropriate EDG Frequency Variations

Introduction: The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to correctly translate applicable design basis (calculations) into specifications. Specifically, the licensee failed to take into account fuel oil consumption at an increased frequency of 61.2 Hz in their EDG loading calculations which resulted in non-conservative Technical Specifications.

Description: While reviewing calculation DGD09301 "Time Dependent Loading and fuel consumption for Emergency Diesel Generator's (EDG) following LOOP/LOCA," Revision 6C, the inspectors noted negative margin between the calculated fuel consumption of 44,021 gallons and the Technical Specification 3.8.3 (TS) limit of 44,000 gallons. In November 2009 as documented in Action Request (AR) 988981, the licensee identified that a SX pump replacement during the September 2009 outage increased the fuel consumption demand needed for the TS 7 day mission time requirement for the 1B EDG, which exceeded TS storage requirement of 44,000 gallons. The inspectors noted that the licensee used the licensed worst case scenario inputs with room temperatures rising to 120 degrees (°) Fahrenheit (F) and Diesel Fuel type American Petroleum Institute (API) 39. Subsequent licensee review indicated that TS 3.8.3 was not adequate to preserve safety, and the licensee applied the provisions of Administrative Letter 98-10, "Dispositioning of Technical Specification that are Insufficient to Assure Plant Safety." Administrative Letter 98-10 identifies that the discovery of an improper or inadequate TS value or required action is considered a degraded or nonconforming condition as defined in GL 91-18. The letter states that imposing administrative controls in response to improper or inadequate TS is considered an acceptable short-term corrective action and reiterates NRC staff expectations that following the imposition of administrative controls, a License Amendment Request (LAR) to the TS, with appropriate justification and schedule, to correct the non-conservative technical specification will be submitted in a timely fashion.

During the September 2009 outage, the licensee implemented Administrative controls to maintain Diesel Oil Storage Tank (DOST) levels higher than that required by TS 3.8.3. The licensee stated in AR 988981 that they would pursue a number of options to recover margin or submit a License Amendment Request to correct the non-conservative TS. The inspectors noted that AR 988981, Assignment 4, stated that the licensee originally intended to adopt the provisions of Technical Specification Task Force (TSTF) -501 "Relocate Stored Fuel Oil and lube Oil Values to Licensee Control" in January 2010 Notice of Availability (NOA) and stated that even if the NOA had not been issued, the LAR would be pursued outside of the TSTF process. However, on April 6, 2010, an

extension to the September 2010 (1-year) submittal date was approved through the corrective action program to accommodate Byron Station Engineering resource limitations in support of refueling outage B2R15 and to address Braidwood Station's CDBI finding associated with the fuel oil volume calculations (frequency variation). In September of 2010, AR Assignment 6, the licensee indicated that the status of NRC's approval of TSTF-501 was not known. The inspectors noted that as of May 20, 2011, the licensee had not submitted an LAR to correct the non-conservative Technical Specification. Subsequent to May 27, 2011, the licensee became aware of a revision 6C to a shared (Braidwood/Byron) calculation DGDO9301 "Time Dependent Loading and Fuel Consumption for EDGs Following LOOP/LOCA" and calculation 19-T-5, Revision 6C "Diesel Generator Loading during LOOP/LOCA." With these revisions to the design calculations, the licensee concluded that Technical Specification 3.8.3 was no longer non-conservative and a LAR was not required. However, the licensee indicated that they still planned to adopt TSTF-501 as an enhancement to the Technical Specification.

The calculations documented minor revisions and added discussion on the consideration given to EDG operation at higher than nominal frequency. Technical Specifications 3.8.1 allowed an EDG frequency tolerance of ± 2 percent. This tolerance was based on Regulatory Guide 1.9 "Application and Testing of Safety-Related Diesel Generators in Nuclear Power Plants" requirements that the EDG frequency recover to within ± 2 percent of 60 Hz (i.e. 58.8 – 61.2 Hz) within a specified period during the sequencing of loads on the bus. Therefore, the EDGs could operate at a frequency of 61.2 Hz, which could be the worst-case scenario for loading of the EDGs. During review of minor revisions to the calculations, the inspectors questioned why the licensee based their fuel consumption on the EDGs operating at 60.5 Hz rather than 61.2 Hz as allowed by TS 3.8.1. The inspectors also questioned the operation of the EDGs, using procedure 1BOSR 8.1.2-2, Revision 29 "1B DIESEL GENERATOR OPERABILITY SURVEILLANCE." Specifically, the licensee had not modified the acceptable frequency variation for steady state operation to the tighter band as credited in the site EDG fuel consumption and loading calculations. In a position paper presented to the inspectors, the licensee noted that upon EDG startup, the governor control circuit ensures that the governor is operating at the setpoint of 60 Hz. In order to provide margin with respect to the vendor specifications, a value of 60.5 Hz was used to conservatively bind the operation of the EDGs and to calculate the EDG electrical loading and fuel consumption values. The licensee further indicated that the system engineer review of recent governor performance data did not identify any concerns with governor performance. The licensee concluded that that no procedure revisions were necessary for this issue.

The inspectors determined that the EDGs could operate at a steady state frequency up to 61.2 Hz according to TS 3.8.1. This would result in a higher fuel consumption that would exceed the TS 3.8.3 minimum 7-day volumetric fuel requirements. The TS 3.8.3 minimum 7-day fuel requirements were based on operating the EDGs at a frequency up to 60.5 Hz, rather than 61.2 Hz, which resulted in a non-conservative TS.

Analysis: The inspectors determined that the failure to correctly translate applicable design basis (calculations) into specifications was contrary to 10 CFR Part 50, Appendix B, Criterion III, "Design Control" and was a performance deficiency.

The finding was determined to be more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of design control and affected the cornerstone objective of ensuring the capability of systems that respond to initiating

events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee failed to account for the increased fuel oil consumption resulting from operation at a higher EDG frequency variation of 61.2 Hz as allowed by TS 3.8.1 and room temperature of up to 120°F in their EDG loading calculations. Therefore, the licensee did not ensure that the minimum fuel oil level in the storage tanks, as required per TS 3.8.3, was adequate to support the EDGs' 7-day mission time.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process, Attachment 0609.04, Phase 1 - Initial Screening and Characterization of Findings," Table 4a, "Characterization Worksheet for IE, MS, and BI Cornerstones." The inspectors determined that the cornerstone best reflecting the dominant risk was the Mitigating Systems cornerstone. The team confirmed that the finding did not result in a loss of operability or functionality per "Part 9900, Technical Guidance, Operability Determination Process for Operability and Functional Assessment," because of the administrative controls already in place (limiting operation of the EDGs to 60.5 Hz). Therefore, this finding was of very low safety significance (Green) because the licensee was able to demonstrate that adequate fuel in the storage tanks would be available to support EDGs mission time when operating at the administratively controlled higher frequency limit specified in procedures.

This finding has a cross-cutting aspect in the area of Problem Identification and Resolution Corrective Action Program because the licensee did not did not thoroughly evaluate the EDG fuel oil consumption when considering EDG frequency variation. Specifically, the licensee failed to translate applicable design bases into specifications which resulted in non-conservative TS. [P.1(c)]

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures shall be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions.

Contrary to the above, as of June 8, 2011, the licensee failed to correctly translate applicable design basis into specifications. Specifically, design control measures (calculations) failed to take into account fuel oil consumption at an increased frequency of 61.2 Hz and resulted in non-conservative Technical Specifications.

Because this violation was of very low safety significance and it was entered into the licensee's corrective action program as AR 1226844, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy (NCV 05000454/2011009-03; 05000455/2011009-03; EDG Usable Fuel Calculations Failed to Consider Appropriate EDG Frequency Variations).

4OA6 MANAGEMENT MEETINGS

.1 Exit Meeting

The inspectors presented the inspection results to Mr. T. Tulon and others of the licensee's staff on May 20, 2011. Licensee personnel acknowledged the inspection results presented.

After obtaining additional information from the licensee, concerning one of the inspector's findings, on June 16, 2011, the inspectors presented a change to the characterization of the finding as stated on May 20, 2011, to Mr. T. Tulon and others of your staff.

Licensee personnel were asked to identify any documents, materials, or information provided during the inspection that were considered proprietary. No proprietary information was identified.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

T. Tulon, Site VP
B. Adams, Plant Manager
E. Hernandez, Engineering Director
B. Jacobs, Senior Plant Engineering Manager
D. Gudger, Reg. Assurance Manager
E. Blondin, Mechanical Design Manager
A. Corrigan, Design Mechanical Engineer
A. Pelletier, Design Mechanical Engineer

Nuclear Regulatory Commission

J. Robbins, Resident Inspector

LIST OF ITEMS OPENED AND CLOSED

Opened and Closed

05000254/2011009-01(DRS) 05000255/2011009-01(DRS)	NCV	Failure to Specify and Perform Required Independent Quality Verification Hold Point Inspections. (Section 1R17.2.b)
05000254/2011009-02(DRS) 05000255/2011009-02(DRS)	NCV	Failure to Follow Procedure Requirements for Temporary Scaffolds that Remain in Place for Over 90 Days. (Section 4OA2.b(1))

05000254/2011009-03(DRS) 05000254/2011009-03(DRS)	NCV	EDG Usable Fuel Calculations Failed to Consider Appropriate EDG Frequency Variations. (Section 4OA2.b(2))

Discussed

None

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety, but rather, that selected sections of portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

CALCULATIONS

Number	Description or Title	Date or Revision
BYR2000-191	Voltage Drop Calc for 480V Switchgear Breaker Control Circuits	0
DGDO9301	Time Dependent Loading and Fuel Consumption for EDGs Following LOOP/LOCA	6C
19-T-5	Diesel-Generator Loading During LOOP/LOCA – Byron Units 1 and 2	06
ATD-0196	Useable Volume in Diesel Oil Storage Tanks and Day Tanks	05
BYR96-126	Diesel Oil Storage Tank (DOST) Level Setpoints	02
EMD-039258	Addendum to Piping Stress Report	00F0

CORRECTIVE ACTION PROGRAM DOCUMENTS REVIEWED

IR Number	Description or Title	Date or Revision
00819587	NRC Conclusion that FP Change Needed NRC Prior Approval	September 18, 2008
00851673	Planned Improper use of Urgent TCC Under 50.59	December 3, 2008
00882029	Issues with 50.59 for Maintenance Activities	February 18, 2009
00943712	Silting of 2AF017A and 2AF006A	July 20, 2009
00945662	NRC Questions Regarding 5059 Screening for EC 367123	July 24, 2009
00948274	Minor Error Found in 50.59 Evaluation	July 21, 2009
01100282	Identified Missing Hold Point Issues	August 10, 2010
01157091	ILT-DO 002 Out of Expanded Tolerance	December 30, 2010
01165509	Jumper Cable Appears to Wrong	January 21, 2011
00737863	Scaffolds Erected Over 90 Days	February 18, 2008
00802171	Review of PBI Log Reveals 50.59 Required	July 31, 2008
00836471	PBI 07-297 is Past its MR90 Time Clock Without a 50.59 Evaluation	October 27, 2008
00872156	WEC Review of 90 Day Time Clock for PBIs has Multiple Issues	January 26, 2009
00894908	Past Due Removal Date on Scaffolds Log	April 6, 2009
01013008	MR 90 Work Order Approaching 90 Days with no 50.59 Completed	January 6, 2010
01092808	MR 90 Past Due PBI	July 21, 2010
01123306	ISFSI Scaffold Review	October 7, 2010
01180251	MOD 50.59 FASA – Scaffolds Left Installed Over 90 Days without 50.59 Review	February 25, 2011
01189673	Monthly Scaffold Reviews	March 19, 2011

CORRECTIVE ACTION PROGRAM DOCUMENTS REVIEWED

IR Number	Description or Title	Date or Revision
01197937	Missed Opportunity for U2 CNMT Scaffold Evaluation	April 5, 2011
01101382	NOS Identified Independent Inspection Plan Issues	August 13, 2010
00988981	Potential Non-Conservative DO Tech Spec 3.8.3	June 9, 2009
00653093	The AF Tunnel Covers Do Not Meet Expected Safety Factors	July 24, 2007

CORRECTIVE ACTION PROGRAM DOCUMENTS GENERATED

IR Number	Description or Title	Date or Revision
01212656	NRC 50.59 Inspection- Continuing Issues with Temp Scaffolds	May 4, 2011
01212259	NRC ID: Orange Gripper Gloves Found Diesel Driven AF	May 5, 2011
01214766	Mod 50.59 Inspection Issue	May 11, 2011
01215832	Portion of Deleted Hanger 2AF07044G Still Intact	May 13, 2011
01215850	Repair/Replacement Plan Required for Deletion (2AF07044G)	May 13, 2011
01216707	NRC Mod 50.59 Inspection - Discrepancy Between EC 370177 and WO	May 16, 2011
01217029	NRC Mod Inspection - Inconsistencies in UFSAR Table 3.2-1	May 17, 2011
01217502	NRC 50.59 INSP - Attention to Detail Errors in WO 966602	May 18, 2011
01217639	NRC 50.59 Inspection - Procedure Wording Enhancement OBOI 7.9	May 18, 2011
01218312	NRC ID - Inappropriate Use of NEI 98-03 for DRP 12-025	May 19, 2011
01218406	2011 NRC Mod 50.59 Inspection - Missing Hold Points	May 20, 2011
01226844	Potential Conflict Between DG and DO Tech Specs	June 9, 2011
01226961	2011 NRC 50.59 Inspection – Missing QV – Hold Points	June 9, 2011

DRAWINGS

Number	Description or Title	Date or Revision
6E-1-4001A	Station One Line Diagram	August 1, 1995
6E-1-4185	Int/Ext Wiring Diagram Fire Hazard Panel 1PL10J	J
AF - 33	Aux. Feedwater Large Bore Isometric	March 3, 2009
M - 2050	Diesel Fuel Oil System Units 1 and 2	J
M - 37	Diagram of Auxiliary Feedwater	August 6, 1998
M – 122	Diagram of Auxiliary Feedwater	February 24, 1995
328-LN53694	4” Breakdown Orifice	October 17, 1986

10 CFR 50.59 EVALUATIONS

Number	Description or Title	Date or Revision
BYR 6G-09-004	Temporarily Change the Function of 6” Gate Valve 2AF017A from Normally Closed to Locked Open due to Valve Stroke Time Failure	July 17, 2009
BYR 6G-09-001	Temporary Removal of 2B AF Diesel (2AF01PB) Jacket Water High Temperature Trip (2TSH-AF147)	February 25, 2009
BYR 6G-08-002	Evaluation of Comp Measures Associated with Degraded Conditions Documented in Byron Station OE 07-007	0
BYR 6G-08-006	UFSAR DRP-11-072 Changes to Clarify SGTR Operator	1
6G-08-003	Installaton of the Final Phase of the Motor-Driven Auxiliary Feedwater Pump Crosstie Line between Units 1 and 2	2
6G-08-005	UFSAR Update to Address Westinghouse NSAL 07-10	2

10 CFR 50.59 SCREENINGS

Number	Description or Title	Date or Revision
6E-05-0181	1A/B, 2A/B Diesel Generator Over Current Protection Revise RSO to Match Calculation (SSC 05-060)	0
6E-08-013	Provide Instantaneous (Magnetic) Trip Dial Settings for New HMCP Series Breaker for 1AP92E-B2	0
6E-08-025	Modify Tripping Logic Associated with the Phase-to-phase Element of the RCP KD-10 Relays	0
6E-08-101	Modify the MOV Closure Control Scheme of 1AF006A/B and 1CC9415	0
6D-08-0001	Reactor Trip or Safety Injection Loss of Offsite Power ½ BOA ELEC-4	January 15, 2008

10 CFR 50.59 SCREENINGS

Number	Description or Title	Date or Revision
6E-09-015	Revise the Existing CT Ratios for CT Associated with the High Side Input to the HU-1 Relays for SAT 242-1	0
6D-09-043	Revise SX Cooling Tower Fan/SX Pump Discharge Temp Requirements	June 29, 2009
6E-09-0078	Temporary Change to Essential Service Water (SX) Cooling Tower Basin 0A/0B Level Low Alarm Setpoint from 80 percent to 89 percent	July 2, 2009
6E-10-113	Update Table 3.9-9 to amend Valve Testing Criteria	October 16, 2010
6E-10-119	Temporarily Jumper Out Cell 42 of ESF Battery 112 to Allow 125 VDC ESF Battery 112 Operation with 57 Cells	December 2, 2010
6E-11-006	Eval of 125 ESF Batteries 112 and 212 for Operation with 56 Cells	January 21, 2011
6E-08-008	AF Tunnel Flood Seal Plate Modifications	02
6E-08-011	The Unit I Portion of a Motor Driven Auxiliary Feedwater Pump Crosstie tine for Byron Units I and 2	02
6E-09-001	Emergency Diesel-Generator Diagnostic/Performance Monitoring System	02
6E-09-077	TS Basis Design Change for the Section B.3.7.5-3	03
6E-09-109	Raise 1B Emergency Diesel Generator (EDG) Diesel Oil Storage Tanks (1DO01TB and 1DO01TD) Level Low Alarm Setpoint to 97percent	03
6E-10-009	Revise UFSAR Sections 8.3.1.1.2.1 for Consistency With Requirements of LCO 3.8.1 Regarding Single SAT Operation	03
6E-10-067	Revise UFSAR Section 9.5.4.2 to Clarify DG Fuel Consumption Requirements	03
6E-10-116	Develop Calculations Supporting AF Diesel Fuel Storage Tech Spec Requirement and Revise Tech Spec Basis	00

MODIFICATIONS

Number	Description or Title	Date or Revision
EC 0000380503	Install New Model Level/Pressure Switch for EDG Diesel Oil Storage Tank (DOST) Low Level Alarm	0
EC 0000349499	Raise DG Air System Pressure for EDG to Operate Properly in Test Mode 1A DG	0
EC 373842	Revise CT Ratios for CTs to HU-1 Relays for	May 18, 2008

MODIFICATIONS

Number	Description or Title	Date or Revision
	SAT 2421 Relays for SAT 242-1	
EC 367209	AF Tunnel Flood Seal Cover	September 24, 2010
DRP 12-025	UFSAR Section 9.2.5.3.1.1 and 9.2.9	01
EC 370177	FW HTR Tube Plugging	June 30, 2008
EC 379027	SER 02-05 Eval for Voids in AF system	00
EC 0000371355	Provide Setting for Replacement Type HMCP Breaker	December 2008
EC 363002	Revise U1 RCS Loop 1B WR RTD to NRA Scaling	0

OTHER DOCUMENTS

Number	Description or Title	Date or Revision
Asmnt # 01152726	FASA for NRC Modification/50.59 Inspection	February 25, 2011
0000382399 000	Temporarily Jumper Out Cell 42 of ESF Battery 112 to allow Operation with 57 Cells	December 3, 2010
CC-AA-103	Configuration Change Control for Permanent Physical Plant Changes	21
CC-AA-112	Temporary Configuration Changes	17
CC-AA-201	Plant Barrier Control Program	8
HU-AA-101	Human Performance Tools and Verification Practices	5
MA-AA-716-010	Maintenance Planning	17
MA- MA-AA-716-025	Scaffold Installation, Modification, and Removal Request Process	5 & 9
0BOL 7.9	LCOAR Ultimate Heat Sink (UHS) Tech Spec LCO No. 3.7.9	11
0BOSR 0.1-0	Unit Common All Modes/All Times Shiftly And Daily Operating Surveillance	35
0BOSR 7.9.4-1	Essential Service Water Cooling Tower Fan Monthly Surveillance	5
WO 966290 04	1B T Hot (Wide Range) Failed High	October 15, 2006
WO 966602 03	1B RC WR Hot Leg Transmitter Spiking	April 8, 2008
NOSA-BYR-09-05	Engineering Design Control Audit	September 2, 2009
BAP 1100-3A3	Evaluated Plant Barrier Matrix (Pg 52/56)	029
Letter Murley	LAR to Specification 3/4/7.5	March 31, 1992
1BOL 8.3	LCOAR Diesel Fuel Oil Tech Spec LCO 3.8.3	05
1BOSR 8.1.2-2	1B Diesel Generator Operability Surveillance	29
BOP AF-3	Filling and Venting the Auxiliary Feedwater System	03
OP-AA-108-115-1001	Operability Evaluation Passport Engineering Change Desktop Guide	01
OP-AA-108-115	Operability Determinations	10k
1BOSR 3.3.1-1	Accident Monitoring Instrumentation Monthly Channel Checks	15
BY-COD-220770-00	Seismic Qualification of Mounting Details for	November 16,

OTHER DOCUMENTS

Number	Description or Title	Date or Revision
	Level Gauge	1990
039258	Minor Revision to Pipe Stress Analysis Auxiliary Feed Water System Piping 2AF07	001
BYR 99-079	YUBA Letter	January 30, 1990
	Byron Station Maintenance Scaffold Log	May 20, 2011
WO 01439434 01	MMD Scaffold Review	May 20, 2011
NO-AA-10	Byron QA Topical Report	85

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
API	American Petroleum Institute
AR	Action Request
CAP	Corrective Action Program
CFR	Code of Federal Regulations
DOST	Diesel Oil Storage Tank
DRS	Division of Reactor Safety
EC	Engineering Change
EDG	Emergency Diesel Generator
EQ	Environmental Qualification
ESF	Engineered Safety Features
HP	Hold Point
IMC	Inspection Manual Chapter
IR	Issue Report
LAR	License Amendment Request
LER	Licensee Event Report
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NO	Nuclear Oversight
NOA	Notice of Availability
NRC	U.S. Nuclear Regulatory Commission
PARS	Publicly Available Records
PBI	Plant Barrier Impairment
PC	Peer Check
P&ID	Piping and Instrumentation Diagram
QA	Quality Assurance
QATR	Quality Assurance Topical Report
QV	Quality Verification
RTD	Resistance Temperature Detector
SDP	Significance Determination Process
SER	Safety Evaluation Report
TCC	Temporary Change
TS	Technical Specifications
TSTF	Technical Specification Task Force
WO	Work Order
UFSAR	Updated Final Safety Analysis Report

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any), will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Robert C. Daley, Chief
Engineering Branch 3
Division of Reactor Safety

Docket Nos. 50-454; 50-455
License Nos. NPF-37; NPF-66

Enclosure: Inspection Report No. 05000454/2011009; and 05000455/2011009(DRS)
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

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