



Exelon Generation®

Oyster Creek  
Route 9 South  
P.O. Box 388  
Forked River, NJ 08731

10 CFR 50.59  
10 CFR 72.48

RA-17-032

May 16, 2017

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555-0001

Oyster Creek Nuclear Generating Station  
Renewed Facility Operating License No. DPR-16  
NRC Docket No. 50-219

Subject: Biennial 10 CFR 50.59 and 10 CFR 72.48 Change Summary Reports –  
January 1, 2015 through December 31, 2016

Enclosed are the Oyster Creek Nuclear Generating Station 10 CFR 50.59 and 10 CFR 72.48 Change Summary Reports for the Evaluations addressing activities that have been implemented in the facility during the period of January 1, 2015 through December 31, 2016.

There are no regulatory commitments contained in this submittal.

Please contact Rheiner Dutes at (609) 971-4629 if any further information or assistance is needed.

Sincerely,

Timothy A. Moore  
Vice President  
Oyster Creek Nuclear Generating Station

Enclosure

cc: Administrator, USNRC Region I  
USNRC Senior Project Manager, Oyster Creek  
USNRC Senior Resident Inspector, Oyster Creek

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NRR

**Exelon Generation Company, LLC  
Oyster Creek Nuclear Generating Station  
Enclosure to RA-17-032**

Docket No. 50-219

**2015 – 2016  
Biennial 10 CFR 50.59 and 10 CFR 72.48 Change Summary Reports**

These summary reports are issued pursuant to reporting requirements for Oyster Creek Nuclear Generating Station (OCNGS). These reports address tests, experiments, and changes to the facility and/or procedures as they are described in the Final Safety Analysis Report for the OCNGS station and the Final Safety Analysis Report for the Standardized NUHOMS Horizontal Modular Storage System. These reports summarize the three (3) tests, experiments, and changes that were implemented between January 1, 2015 and December 31, 2016 under 10 CFR 50.59. There were no tests, experiments, or changes implemented by OCNGS under 10 CFR 72.48. Note, Evaluation OC-2015-E-001 was put in twice (as Items 1 and 2) to address both Revision 0 and 1 scopes.

**Item # 1**

**Evaluation Number:** OC-2015-E-0001, Rev.0  
**PORC Review Meeting No. (Date):** 15-05 (05/04/15)  
**Activity/Document No.:** TCP / 15-00056, Rev.0

**Title:** Disable the Turbine Trip Function of TBWD

**Description of Activity:**

This activity is a design change type TCCP to temporarily remove the turbine trip from the Thrust Bearing Wear Detector (TBWD). This will be done by temporarily removing the test plug from the TBWD test block. The TCCP will also disable annunciator Q-2-b, THRUST BRG WEAR HI, by pulling the annunciator card.

**Reason for Activity:**

As documented in IR 2475829, annunciator Q-2-b, THRUST BRG WEAR HI, did not clear when it was supposed to clear during surveillance 625.4.002 testing. As a result, the test plug for the Thrust Bearing Wear Detector, which was pulled for the surveillance test, was left pulled. This TCCP is to keep the test plug pulled until repairs can be completed. The TCCP will also pull the alarm card for annunciator Q-2-b to clear the locked-in alarm.

**Effect of Activity:**

This ECR will temporarily remove the Turbine trip function of the Thrust Bearing Wear Detector. This trip is described in the UFSAR. This TCCP will also pull the annunciator card for Q-2-b to clear the window. With the TCCP installed, the TBWD will not trip the turbine or alarm annunciator Q-2-b, it will only illuminate the local and Control Room lights. All actions required will be manual.

**Summary of Conclusion for the Activity's 50.59 Review:**

This activity does result in a change that adversely affects the design function of any SSC as described in the UFSAR. It does involve a change to a procedure that adversely affects how any UFSAR described SSC design function is operated or controlled. It does not revise any existing method of evaluation, or introduce any new method of evaluation that is used to establish the design basis or safety analysis for Oyster Creek. This activity does not require any SSC to be operated beyond any design limitations and it does not require a change to the Oyster Creek Technical Specifications or Operating License.

Therefore, a 50.59 Evaluation is required, however the evaluation determined that prior NRC approval is not needed to implement this activity.

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**Item # 2**

**Evaluation Number:** OC-2015-E-0001, Rev.1  
**PORC Review Meeting No. (Date):** 15-09 (06/16/15)  
**Activity/Document No.:** ECR / 15-00056, Rev.1

**Title:** Modification to Disable the Turbine Trip Function of TBWD

**Description of Activity:**

ECR 15-00056 Rev 0 was a design change type TCCP to temporarily remove the turbine trip from the Thrust Bearing Wear Detector (TBWD). This was done by temporarily removing the test plug from the TBWD test block. The TCCP also disabled annunciator Q-2-b, THRUST BRG WEAR HI, by pulling the annunciator card.

ECR 15-00056 Rev 1 is a design change type ECR to permanently remove the turbine trip from the Thrust Bearing Wear Detector (TBWD) by permanently removing the test plug from the TBWD test block. Revision 1 also restores annunciator Q-2-b to normal by re-installing the annunciator card.

**Reason for Activity:**

As documented in IR 2475829, annunciator Q-2-b, THRUST BRG WEAR HI, did not clear when it was supposed to clear during surveillance 625.4.002 testing. As a result, the test plug for the Thrust Bearing Wear Detector, which was pulled for the surveillance test, was left pulled. The TCCP kept the test plug pulled until repairs could be completed. The TCCP also pulled the alarm card for annunciator Q-2-b to clear the locked-in alarm.

During the ERVR review, it was determined that the Turbine Bearing Wear Detector (TBWD) was a single point vulnerability. The mechanical failure of the TBWD could cause a turbine trip, which would result in a plant trip. Revision 1 of this ECR will eliminate this single point vulnerability.

**Effect of Activity:**

The TCCP temporarily removed the Turbine trip function of the Thrust Bearing Wear Detector. This trip is described in the UFSAR. The TCCP also pulled the annunciator card for Q-2-b to clear the window. With the TCCP installed, the TBWD would not trip the turbine or alarm annunciator Q-2-b, it would only illuminate the local and Control Room lights. All actions required were manual.

Revision 1 of the ECR permanently removes the Turbine trip function of the Thrust Bearing Wear Detector. This trip is described in the UFSAR. The ECR also re-installs the annunciator card for Q-2-b. After the modification, the TBWD will not trip the turbine. It will only alarm annunciator Q-2-b, illuminate the local light, and illuminate the Control Room light. All actions required will be manual.

**Summary of Conclusion for the Activity's 50.59 Review:**

This activity does result in a change that adversely affects the design function of any SSC as described in the UFSAR. It does involve a change to a procedure that adversely affects how any UFSAR described SSC design function is operated or controlled. It does not revise any existing method of evaluation, or introduce any new method of evaluation that is used to establish the design basis or safety analysis for Oyster Creek. **This activity does not require any SSC to be operated beyond any design limitations and it does not require a change to the Oyster Creek Technical Specifications or Operating License.**

Therefore, a 50.59 Evaluation is required, however the evaluation determined that prior NRC approval is not needed to implement this activity.

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**Item # 3**

**Evaluation Number:** OC-2015-E-0002, Rev.0  
**PORC Review Meeting No. (Date):** 15-07 (05/13/15)  
**Activity/Document No.:** ECR / 15-00197, Rev.0

**Title:** ECR to Remove the Output Trip Functions from the Digital Protection Relay System 'B' (DPRS B)

**Description of Activity:**

ECR OC 15-00197 removes all DPRS B output trip functions and modifies the Main Transformer sudden pressure output such that it now energizes the 86T lockout relay to initiate the Main Turbine trip. This ECR also modifies the Main Transformer sudden pressure alarm.

**Reason for Activity:**

At 17:27 on 5-7-2015, the Oyster Creek Main Generator locked out due to actuation of the 86T Main Transformer lockout relay (IR 2497406). This resulted in a Main Turbine Trip and Reactor Scram as designed. A review of event log data from the Digital Protection Relay System (DPRS) indicated a Main Transformer differential (current) A phase trip (87T) was processed. This output energized the 86T lockout relay to initiate the trip. Troubleshooting has concluded that there was no A phase Main Transformer differential (current) "A" and the trip was spurious.

Since the cause of the trip is unknown, the DPRS B system is modified to remove the DPRS output trip functions. In its place, a Main Transformer sudden pressure relay (SPR) trip is provided to energize the 86T lockout relay to initiate a turbine trip.

**Effect of Activity:**

This ECR removes the DPRS B output trip functions that initiate the 86T Main Transformer lockout relay in order to minimize the likelihood of additional spurious trips. The Main Transformer sudden pressure output is modified to replace the DPRS B trip function with regard to initiating an 86T lockout turbine trip. Main Transformer Lockout Relay 86T input changed from DPRS B to the SPR. Other DPRS B backup trips also are disabled, thus relying on DPRS A for primary trips.

**Summary of Conclusion for the Activity's 50.59 Review:**

Implementing ECR OC 15-00197 does result in a change that adversely affects the design function of any SSC as described in the UFSAR. This ECR does involve a change to a procedure that adversely affects how any UFSAR described SSC design function is operated or controlled. It does not revise any existing method of evaluation, or introduce any new method of evaluation that is used to establish the design basis or safety analysis for Oyster Creek. This activity does not require any SSC to be operated beyond any design limitations and it does not require a change to the Oyster Creek Technical Specifications or Operating License.

Therefore, a 50.59 Evaluation is required. However, prior NRC approval is not needed to implement this ECR.

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**Item # 4**

**Evaluation Number:** OC-2016-E-0001, Rev.0  
**PORC Review Meeting No. (Date):** 16-02 (02/08/16)  
**Activity/Document No.:** ECR / 15-00466, Rev.0

**Title:** Remove the Turbine Trip for Reheater Protection during Light Load

**Description of Activity:**

The modification is to permanently remove the turbine trip from the Reheater Protection during Light Load and opening and closing interlocks with Reheater Stop Check Valves V-1-21 and V-1-34. This automatic action will be replaced with operator manual action.

**Reason for Activity:**

As documented in IR 2577544, it was determined that the turbine trip from the Reheater Protection during Light Load was a vulnerability. A failure in this circuit could cause a turbine trip, which would result in a plant trip.

**Effect of Activity:**

The modification is to permanently remove the turbine trip from the Reheater Protection

during Light Load and opening and closing interlocks with Reheater Stop Check Valves V-1-21 and V-1-34. This turbine trip is described in the UFSAR. The purpose of the turbine trip is to protect the reheaters from high differential temperature between the tube and shell sides. This automatic action has been procedurally controlled with plant startup procedure 201, sections 5.71 & 6.77, and Plant shutdown procedure 203, section 5.9.2. The performance of the Turbine Generator and the effects of failures of components on the rest of the plant have been evaluated. The transient analyses for the Turbine Generator are included in Chapter 15. The removal of the Reheater Protection during Light Load and opening and closing interlocks with Reheater Stop Check Valves V-1-21 and V-1-34 do not affect the transient analyses because damage to the reheaters only results in losses related to turbine efficiency.

**Summary of Conclusion for the Activity's 50.59 Review:**

This activity does result in a change that adversely affects the design function of any SSC as described in the UFSAR. It does involve a change to a procedure that adversely affects how any UFSAR described SSC design function is operated or controlled. It does not revise any existing method of evaluation, or introduce any new method of evaluation that is used to establish the design basis or safety analysis for Oyster Creek. This activity does not require any SSC to be operated beyond any design limitations and it does not require a change to the Oyster Creek Technical Specifications or Operating License.

Therefore, a 50.59 Evaluation is required, however the evaluation determined that prior NRC approval is not needed to implement this activity. Prior NRC approval is not required because all the Evaluation Questions are No. The basis for the Evaluation questions being No are as follows. The performance of the Turbine Generator and the effects of failures of components on the rest of the plant have been evaluated. The transient analyses for the Turbine Generator are included in Chapter 15. The removal of the Reheater Protection during Light Load and opening and closing interlocks with Reheater Stop Check Valves V-1-21 and V-1-34 do not affect the transient analyses because damage to the reheaters only results in losses related to turbine efficiency. Therefore, damage to the reheaters is not an initiator of any accident, not an initiator of any new malfunctions, does not introduce a failure result, no new failure modes are introduced and does not result in a DBLFPB being exceeded or altered.

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