

10 CFR 50.46

RA-16-048

May 26, 2016

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: 10 CFR 50.46 Annual Report

Reference: Letter from James Barstow, Exelon Generation Company, LLC, to U.S. Nuclear Regulatory Commission, "10 CFR 50.46 Annual Report," dated May 19, 2015

The purpose of this letter is to transmit the annual 10 CFR 50.46 reporting information for Oyster Creek Nuclear Generating Station (OCNGS). The previous annual 50.46 report for OCNGS submitted on May 19, 2015 (Reference) provided the cumulative Peak Cladding Temperature (PCT) errors for the most recent fuel designs.

Since the referenced annual report was issued, no vendor notifications of Emergency Core Cooling System (ECCS) model errors/changes that are applicable to OCNGS have been issued. Also, no ECCS-related changes or modifications have occurred at OCNGS that affect the assumptions of the ECCS analyses.

Two attachments are included with this letter that provide the current OCNGS 10 CFR 50.46 status. Attachment 1, "*Peak Cladding Temperature Rack-Up Sheet*," provides information regarding the PCT for the limiting large break Loss of Coolant Accident (LOCA) analysis evaluations for OCNGS. Attachment 2, "*Assessment Notes*," contains a detailed description for each change or error reported.

There are no commitments contained in this letter.

If you have any questions, please contact Richard Gropp at 610-765-5557.

Respectfully,



David P. Helker
Manager, Licensing and Regulatory Affairs
Exelon Generation Company, LLC

Attachments: 1) Peak Cladding Temperature Rack-Up Sheet
2) Assessment Notes

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

ATTACHMENT 1

10 CFR 50.46

**"Acceptance criteria for emergency core cooling systems
for light-water nuclear power reactors"**

**Report of the Emergency Core Cooling System
Evaluation Model Changes and Errors**

Assessments as of May 26, 2016

Peak Cladding Temperature Rack-Up Sheet

Oyster Creek Nuclear Generating Station

PLANT NAME: Oyster Creek Nuclear Generation Station (OCNGS)
ECCS EVALUATION MODEL: SAFER/CORCL/GESTR-LOCA (GE11)
SAFER/CORCL/PRIME (GNF2)
REPORT REVISION DATE: 05/26/2016
CURRENT OPERATING CYCLE: 25

ANALYSIS OF RECORD CALCULATIONS

Calculations:

1. GE-NE-0000-0001-7486-01P, "Oyster Creek Generating Station Loss-of-Coolant Accident Evaluation for GE11," GE Nuclear Energy, dated July 2002.
2. Report 0000-0098-3503-R2, "Oyster Creek Generating Station GNF2 ECCS-LOCA Evaluation," GEH Nuclear Energy, dated November 2010
3. Report 000N3005-SRLR Rev 1, "Supplemental Reload Licensing Report for Oyster Creek Reload 25 Cycle 25," dated September 2014

Fuel:	GE11, GNF2
Limiting Fuel Type:	GNF2
Limiting Single Failure:	ADS Valve
Limiting Break Size and Location:	4.66 ft ² Double-Ended Guillotine (DEG) in a Recirculation Discharge Pipe
Reference Peak Cladding Temperature (PCT) for GE11 Fuel:	2150°F
Reference Peak Cladding Temperature (PCT) for GNF2 Fuel:	2175°F

MARGIN ALLOCATION

A. PRIOR LOCA MODEL ASSESSMENTS

10 CFR 50.46 Report dated August 27, 2014 (See Note 1)	GE11: $\Delta PCT = +15^{\circ}F$ GNF2: $\Delta PCT = N/A$ (New Analysis)
10 CFR 50.46 Report dated May 19, 2015 (See Note 2)	GE11: $\Delta PCT = 0^{\circ}F$ GNF2: $\Delta PCT = 0^{\circ}F$
NET PCT (GE11/GNF2)	GE11: 2165°F GNF2: 2175°F

B. CURRENT LOCA MODEL ASSESSMENTS

None (See Note 3)	GE11: $\Delta PCT = 0^{\circ}F$ GNF2: $\Delta PCT = 0^{\circ}F$
Total PCT Change from Current Assessments	GE11: $\sum \Delta PCT = 0^{\circ}F$ GNF2: $\sum \Delta PCT = 0^{\circ}F$
Cumulative PCT Change from Current Assessments	GE11: $\sum \Delta PCT = 0^{\circ}F$ GNF2: $\sum \Delta PCT = 0^{\circ}F$
NET PCT	GE11: 2165°F GNF2: 2175°F

ATTACHMENT 2

10 CFR 50.46

**"Acceptance criteria for emergency core cooling systems
for light-water nuclear power reactors"**

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Assessments as of May 26, 2016

Assessment Notes

Oyster Creek Nuclear Generating Station

1) Prior LOCA Assessment

The previous LOCA assessment provides the PCT impact of error notifications (2014-01, 2014-02, 2014-03, and 2014-04) for the fuel residing in the OCNGS reactor.

Error 2014-01 addresses several code maintenance updates to the SAFER04A model with accumulated PCT change of +10°F. Error 2014-02 corrected a logic error in the calculated system mass with a PCT change of -30°F. Error 2014-03 corrected an error with the imposed minimum pressure differential (Δp) for droplet flow above a two-phase level in the core with a PCT change of +15°F. Error 2014-04 corrected the pressure head representation when defining the counter current flow limitation (CCFL) with PCT change of +20°F. The net PCT impact of these errors as previously reported was +15°F.

[Reference: RA-14-072, Letter from James Barstow (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "10 CFR 50.46 30-Day Report," dated August 27, 2014.]

2) Prior LOCA Model Assessment

The referenced document reported that a new LOCA analysis for OCNGS was performed to provide MAPLHGRs for Cycle 25 operation which started in October 2014. New MAPLHGRs were generated for all GNF2 bundles in the reactor using SAFER/CORCL/PRIME method with updated LOCA analysis inputs for the Cycle 25 reload. A new target PCT of 2175°F was used to calculate improved MAPLHGR for GNF2 fuel in Cycle 25, whereas a target PCT of 2150°F was used to confirm MAPLHGR for twice-burned GE11 fuel to be the same as the previous cycle. The new LOCA analysis for GNF2 fuel accounts for all previous reported error notifications including: 2014-01, 2014-02, 2014-03, and 2014-04. Therefore, the previous LOCA model assessment discussed in Note 1 no longer applies to GNF2 fuel. However, for GE11 fuel the LOCA assessment due to the previous error notifications and their associated PCT assessment remain applicable.

[Reference: RA-15-040, Letter from James Barstow (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "10 CFR 50.46 Annual Report," dated May 19, 2015.]

3. Current LOCA Model Assessment

No vendor 10 CFR 50.46 change/error notifications have been received since the last annual report.