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10 CFR 50.90

2130-05-20029
February 2, 2005

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

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

Subject: Technical Specification Change Request No. 280 – Reactor Water Clean-Up
High Energy Line Break Detection and Isolation

Pursuant to 10 CFR 50.90, "Application for amendment of license or construction permit", AmerGen Energy Company, LLC (AmerGen) hereby requests the following amendment to the Technical Specifications (TS), Appendix A of Operating License DPR-16 for Oyster Creek Generating Station (OCGS).

The proposed changes will revise the OCGS Technical Specifications to incorporate the isolation trip setting and the instrumentation surveillance requirements of the Reactor Water Clean-up (RWCU) system High Energy Line Break (HELB) detection and isolation equipment. The proposed changes will revise Tables 3.1.1 and 4.1.1 and the associated TS Bases.

Enclosure 1 to this letter provides the evaluation of the proposed changes and the no significant hazards consideration determination. Enclosure 2 provides the existing TS pages marked-up to show the proposed changes. The TS Bases page is provided for information only, and does not require NRC approval.

AmerGen requests approval of the proposed amendment by January 15, 2006. Once approved, the amendment will be implemented within 60 days of issuance.

The proposed changes to the Technical Specifications have undergone a review in accordance with Section 6.5 of the Oyster Creek Technical Specifications. No new regulatory commitments are established by this submittal.

AmerGen has concluded that the proposed changes present no significant hazards consideration under the standards set forth in 10 CFR 50.92.

We are notifying the State of New Jersey of this application for changes to the Technical Specifications by transmitting a copy of this letter to the designated State Official.

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If any additional information is needed, please contact David Robillard at 610-765-5952.

I declare under penalty of perjury that the foregoing is true and correct.

Sincerely,

2/2/2005
Executed On:


C. N. Swenson
Site Vice President
Oyster Creek Generating Station

- Enclosures:
- 1) Oyster Creek Technical Specification Change Request #280, Evaluation of Proposed Changes.
 - 2) Oyster Creek Technical Specification Change Request #280, Mark-up of Proposed Technical Specification Page Changes.

C: P. S. Tam – USNRC Senior Project Manager, Oyster Creek
S. J. Collins – Administrator, USNRC Region 1
R. J. Summers – USNRC Senior Resident Inspector, Oyster Creek
K. Tosch – Director, Bureau of Nuclear Engineering, NJDEP
File No. 04036

ENCLOSURE 1

Oyster Creek Technical Specification Change Request No. 280

Evaluation of Proposed Changes

1.0 INTRODUCTION

The proposed changes to the Facility Operating License No. DPR-16 for Oyster Creek Generating Station (OCGS) would revise the Technical Specifications (TS) to incorporate the requirements for the Reactor Water Clean-up (RWCU) system High Energy Line Break (HELB) detection and isolation equipment. The detection and isolation system consists of two trip systems, both of which are required to actuate to close the RWCU isolation valves. Each trip system contains two temperature switches, only one of which is required to trip each trip system.

The RWCU HELB instrumentation was installed in September 1998. In late 1997, General Public Utilities Nuclear (GPUN) announced that it would only continue to operate Oyster Creek until the fall of 2000. Based on the decision to retire the plant early, GPUN determined that a TS amendment was not required. In August 2000, AmerGen purchased Oyster Creek and an action was assigned to develop and submit a license amendment request to add the RWCU HELB instrumentation setpoints and surveillance requirements to the TS. It should be noted, that the RWCU HELB surveillance requirements, as stated in the proposed Table 4.1.1, have been satisfactorily performed for each instrument, at the proposed frequency since the modification was installed in 1998.

2.0 DESCRIPTION OF PROPOSED CHANGE

The proposed changes would revise Technical Specification Table 3.1.1 to define the trip setpoint for the system, to identify those operational conditions when the detection and isolation equipment will be required to be operable, to specify the minimum required number of operable trip and instrumentation channels, and to describe the required actions if the minimum number of trip or instrumentation channels are not operable. Table 4.1.1 would be revised to add a requirement to perform a system channel test every three months and a system calibration once per refueling outage. The TS Bases will also be revised to include a description of the detection and isolation equipment.

3.0 BACKGROUND

General Electric Company (GE) Service Information Letter (SIL) 604 (Reference 2) identified a concern regarding the isolation of the RWCU system following a RWCU system HELB. Automatic closure of the RWCU system isolation valves is initiated by a Low-Low reactor water level signal. The GE SIL indicated that this isolation signal setpoint might not be reached, if there is sufficient feedwater flow to maintain the reactor water level above the Low-Low water level setpoint. This condition could occur if the reactor is operating at reduced power levels or if the line break is smaller than a full guillotine break of the RWCU piping. If this condition occurred, reactor coolant would continue to be released into the Reactor Building through the HELB, until an operator manually isolated the HELB.

In order to resolve this concern, OCGS installed a modification during the 17R refueling outage, in October 1998, to provide for additional break detection/isolation, to isolate the RWCU system during a RWCU system HELB downstream of the system isolation valves. This safety grade break detection/isolation equipment monitors RWCU pump room

temperature and initiates a RWCU system isolation when ambient temperature exceeds a preset limit, below the process safety limit of 180 degrees F. This modification was evaluated under 10 CFR 50.59 and it was determined that the modification did not constitute an unreviewed safety question and would not have an adverse impact on nuclear safety, safe plant operation or the environment.

4.0 REGULATORY REQUIREMENTS & GUIDANCE

10 CFR 50, Appendix A, General Design Criteria (GDC) 54 requires that piping systems penetrating primary containment be provided with leak detection, isolation and containment capabilities having redundancy, reliability and performance capabilities which reflect the importance to safety of isolating the systems. The RWCU HELB detection/isolation equipment monitors RWCU pump room temperature and initiates a RWCU system isolation when ambient temperature reaches a preset limit, prior to exceeding the process safety limit of 180 degrees F.

5.0 TECHNICAL ANALYSIS

GE SIL 604 (Reference 2) identified a concern regarding the isolation of the RWCU system following a RWCU system HELB. Automatic closure of the RWCU system isolation valves is initiated by a Low-Low reactor water level signal. The GE SIL indicated that this isolation signal setpoint might not be reached, if there is sufficient feedwater flow to maintain the reactor water level above the Low-Low water level setpoint. This condition could occur if the reactor is operating at reduced power levels or if the line break is smaller than a full guillotine break of the RWCU piping. If this condition occurred, reactor coolant would continue to be released into the Reactor Building through the HELB, until an operator manually isolated the HELB.

In order to resolve this concern, OCGS installed a modification during the 17R refueling outage, in October 1998, to provide for additional break detection/isolation, to isolate the RWCU system during a RWCU system HELB downstream of the system isolation valves. This safety grade break detection/isolation equipment monitors RWCU pump room temperature and initiates a RWCU system isolation when ambient temperature exceeds a preset limit, below the process safety limit of 180 degrees F. The system is designed to detect a line failure as small as a one inch diameter pipe and as large as a full guillotine rupture of the largest system pipe (six inches diameter). The small line break is the most difficult to detect, and as such, is used to establish the location and actuation limit of the temperature monitor.

Calculation C-1302-215-E610-060, which supports the safety evaluation for this modification, determined that a detector located at the RWCU pump room exit will detect the failure of an instrument tube size break within one minute. This calculation established an actuation setpoint of 180°F for the RWCU HELB detectors to be consistent with the Emergency Operating Procedures (EOPs) current at the time of the modification. The EOPs direct the operators to enter the Secondary Containment Control procedure and take appropriate actions to isolate systems discharging into this area at 180°F. This is a conservative value that considers the maximum allowable environmental temperature for equipment and instrumentation installed within this area, systems operational values and system interactions.

The location of the detector was selected to ensure detection of the smallest break size within one minute of the line failure. The location provides assurance that the steam will come in contact with the detectors regardless of the location of the line failure.

The proposed changes to TS Table 3.1.1, "Protective Instrumentation Requirements," define the trip setpoint for the system, describe the operational conditions when the RWCU system HELB detection/isolation equipment must be operable, the minimum required number of operable trip and instrument channels and the required actions, if the minimum number of trip channels or instrument channels are not operable. The proposed changes to Table 3.1.1 are consistent with the guidance provided in NUREG-1433, "Standard Technical Specifications – General Electric Plants BWR/4", Revision 3, dated June 2004. The proposed changes to TS Table 4.1.1, "Minimum Check, Calibration and Test Frequency for Protective Instrumentation," provide frequencies and remarks for testing and calibrating the RWCU system HELB detection/isolation equipment to verify continued operability. These changes are consistent with the NUREG-1433 requirements for test and calibration of RWCU system isolation area high temperature instrumentation.

6.0 REGULATORY ANALYSIS

10 CFR 50.36(c)(2) requires that Limiting Conditions for Operation (LCO) be included in the plant Technical Specifications. The RWCU HELB detection/isolation equipment functions to isolate the RWCU system in the event of a HELB downstream of the primary containment isolation valves. Therefore, the RWCU HELB detection/isolation equipment satisfies the 10 CFR 50.36 requirements for inclusion in the OCGS TS.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

7.0 NO SIGNIFICANT HAZARDS CONSIDERATION

AmerGen Energy Company, LLC (AmerGen) has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment," as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed changes will not significantly increase the probability or consequences of an accident previously evaluated. The proposed changes have no impact on the integrity of the reactor coolant pressure boundary and will not induce a Loss of Coolant Accident (LOCA) or a HELB. The Reactor Water Clean-up (RWCU) system High Energy Line Break (HELB) detection/isolation equipment will function to isolate the RWCU system on a HELB downstream of the RWCU system isolation valves. The changes do not alter the physical design or operational procedures associated

with any plant structure, system, or component. The addition of the RWCU HELB detection/isolation equipment setpoints and surveillance requirements to the Technical Specifications (TS) satisfies the 10 CFR 50.36 requirements for limiting conditions for operations (LCO) and surveillance requirements that should be included in the TS.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed changes do not alter the physical design, safety limits, or safety analysis assumptions associated with the operation of the plant. The proposed changes add TS requirements for the operability and surveillance testing of the RWCU system HELB detection/isolation equipment. The proposed changes do not introduce any new accident initiators, nor do they reduce or adversely affect the capabilities of any plant structure or system in the performance of their safety function.

Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

The proposed changes will not affect any margin of safety as defined in the basis for the OCGS Safety Analysis Report. The changes add TS LCO and surveillance requirements to assure that the RWCU system HELB detection/isolation equipment is operable under the plant operating conditions when a RWCU system HELB is possible. The changes do not delay the RWCU system isolation time as compared to original plant design.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Based on the above, AmerGen concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

8.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards

consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9).

Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

9.0 PRECEDENT

The NRC has granted similar license amendments for the J. A. Fitzpatrick (Amendment 185), Browns Ferry 2 (Amendment 219), and Monticello (Amendment 117) plants.

10.0 REFERENCES

- 1) OC UFSAR, Update 13
- 2) GE SIL 604, "Reactor Water Clean-up System Break Detection"

ENCLOSURE 2

Oyster Creek Technical Specification Change Request No. 280

Markup of Proposed Technical Specification Page Changes

Revised TS Pages

3.1-8 (TS Bases)

3.1-15

4.1-8

The drywell high radiation setpoint will ensure a timely closure of the large vent and purge isolation valves to prevent releases from exceeding ten percent of the dose guideline values allowed by 10 CFR 100. The containment vent and purge isolation function is provided in response to NUREG 0737 Item II E.4.2.7.

References:

- (1) NEDC-30851P-A, "Technical Specification Improvement Analyses for BWR Reactor Protection System."
- (2) NEDC-30936P-A, "BWR Owners' Group Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation)," Parts 1 and 2.
- (3) NEDC-30851P-A, Supplement 1, "Technical Specification Improvement Analysis for BWR Control Rod Block Instrumentation."
- (4) NEDC-30851P-A, Supplement 2, "Technical Specification Improvement Analysis for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation."
- (5) NEDC-31677P-A, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation."
- (6) GENE-770-06-1-A, "Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications."

Temperature switches are provided at the entrance of the RWCU Pump Room to detect a line break downstream of the RWCU isolation valves. A line break will raise room temperature. Before the room temperature exceeds 180°F, the switches will trip and close the RWCU isolation valves. This ensures that a high energy line break will automatically be detected and isolated, even if an RWCU System isolation is not initiated by a LO-LO reactor water level signal. System isolation at this temperature will minimize the impact on off-site releases and the environmental qualification profiles for the Reactor Building.

TABLE 3.1.1 PROTECTIVE INSTRUMENTATION REQUIREMENTS
Sheet 7 of 13

Function	Trip Setting	Reactor Modes in which Function Must Be OPERABLE				Minimum Number of OPERABLE or OPERATING (tripped) Trip Systems	Minimum Number of Instrument Channels Per OPERABLE Trip System	Action Required*
		Shutdown	Refuel	Startup	Run			
M. Diesel Generator Load Sequence Timers (Cont'd.)								
2. Service Water Pump (aa)	120 sec ± 15% (SK1A) (SK2A) 10 sec. ± 15% (SK7A) (SK8A)	X	X	X	X	2(o)	2(p)(kk)	Consider the pump inoperable and comply within 7 days (See note q)
3. Reactor Building Closed Cooling Water Pump (hh)	166 sec ± 15%	X	X	X	X	2(m)	1(n)(kk)	Consider the pump inoperable and comply within 7 days (See note q)
N. Loss of Power								
a. 4.16 KV Emergency Bus Undervoltage (Loss of Voltage)	**	X(f)	X(f)	X(f)	X(f)	2	1(kk)	
b. 4.16 KV Emergency Bus Undervoltage (Degraded Voltage)	**	X(f)	X(f)	X(f)	X(f)	2	3(kk)	See note cc
O. Containment Vent and Purge Isolation								
1. Drywell High Radiation	≤ 74.6 R/hr	X(u)	X(u)	X(u)	X	1	1	Isolate vent & Purge pathways or PLACE IN COLD SHUTDOWN CONDITION
<i>P. RWCU HELB Isolation</i>								<i>close Isolation valves V-16-1, V-16-2, V-16-14 & V-16-61</i>
<i>i. RWCU Pump Room High Temperature</i>	<i>≤ 180°C</i>	<i>X(s)</i>	<i>X(s)</i>	<i>x</i>	<i>X</i>	<i>2</i>	<i>2(cc)</i>	
OYSTER CREEK						3.1-15		Corrected Letter dated 10/28/99
Amendment No.: 15,44,60,80,160,171,195, 208								

TABLE 4.1.1
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MINIMUM CHECK, CALIBRATION AND TEST FREQUENCY FOR PROTECTIVE INSTRUMENTATION

<u>Instrument Channel</u>	<u>Check</u>	<u>Calibrate</u>	<u>Test</u>	<u>Remarks (Applies to Test & Calibration)</u>
32. LPRM Level				
a) Electronics	N/A	1/12 mo.	1/12 mo.	
b) Detectors	N/A	Note 4	N/A	
33. <i>Rwcu HELB High Temperature</i>	<i>N/A</i>	<i>Each refueling outage</i>	<i>1/3 mo</i>	<i>Perform Channel Tests using the test switches.</i>
* Calibrate prior to startup and normal shutdown and thereafter check 1/s and test 1/wk until no longer required.				

Legend:

- N/A = Not Applicable
- 1/s = Once per shift
- 1/d = Once per day
- 1/3d = Once per 3 days;
- 1/wk = Once per week
- 1/mo. = Once per month
- 1/3 mo. = Once every 3 months;
- 1/12 mo. = Once every 12 months
- 1/24 mo. = Once every 24 months