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

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

Subject: Additional Information Concerning FSAR Supplement Supporting the Oyster Creek Generating Station License Renewal Application (TAC No. MC7624)

Reference: AmerGen's Letter 2130-06-20354 "Updated FSAR Supplement Information Supporting the Oyster Creek Generating Station License Renewal Application (TAC No. MC7624), dated June 23, 2006

In the referenced letter, AmerGen Energy Company, LLC (AmerGen) provided the NRC an update to FSAR Supplement information previously provided in its application for a renewed operating license for Oyster Creek Generating Station (Oyster Creek). Subsequent NRC staff review identified the need to add clarifying details to the Oyster Creek aging management programs as described in Sections A.1.10, A.1.12, A.1.23 and A.1.27 of the License Renewal Application (LRA).

This letter provides the necessary information. Enclosure 1 provides updates to the FSAR Supplement program descriptions (Sections A.1.10, A.1.12, A.1.23 and A.1.27 of the LRA). Enclosure 2 provides a summary of the impacts, if any, of these clarifications to the License Renewal Commitment List (Section A.5 of the LRA).

If you have any questions, please contact Fred Polaski, Manager License Renewal, at 610-765-5935.

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

Respectfully,

Executed on 07-07-2006

Michael P. Gallagher
Vice President, License Renewal
AmerGen Energy Company, LLC

Enclosures: 1. Updated FSAR Supplement Program Descriptions
2. Changes to License Renewal Commitments

A114
A053

cc: Regional Administrator, USNRC Region I, w/o Enclosures
USNRC Project Manager, NRR - License Renewal, Safety, w/Enclosures
USNRC Project Manager, NRR - License Renewal, Environmental, w/o Enclosures
USNRC Project Manager, NRR - Project Manager, OCGS, w/o Enclosures
USNRC Senior Resident Inspector, OCGS, w/o Enclosures
Bureau of Nuclear Engineering, NJDEP, w/Enclosures
File No. 05040

ENCLOSURE 1

Updated FSAR Supplement Program Descriptions
Sections A.1.10, A.1.12, A.1.23 and A.1.27

Oyster Creek Generating Station
License Renewal Application (TAC No. MC7624)

Note: Information within the following Appendix A Sections that is new since AmerGen June 23, 2006 Letter 2130-06-20354 is presented in bold font for ease of identification.

A.1.10 Thermal Aging and Neutron Irradiation Embrittlement of Cast Austenitic Stainless Steel (CASS)

The Thermal Aging and Neutron Irradiation Embrittlement of Cast Austenitic Stainless steel (CASS) aging management program is a new program that will provide for aging management of CASS reactor internal components within the scope of license renewal. The program will be implemented prior to the period of extended operation.

The program will include a component specific evaluation of the loss of fracture toughness in accordance with the criteria specified in NUREG 1801, XI.M13. **This detailed component-specific evaluation is a generic industry activity that is being addressed by the BWRVIP. The evaluation is currently budgeted for completion in 2007, after which Oyster Creek will implement the requirements of the BWRVIP guidelines. If industry activities do not complete in a timely manner, AmerGen will perform the required evaluations. In either case, the following information will be submitted to the NRC at least one year prior to the period of extended operation: 1) the type and composition of CASS reactor internal components within the scope of license renewal; and 2) the results of evaluations performed to determine susceptibility to thermal aging and neutron irradiation embrittlement.** For those components where loss of fracture toughness may affect function of the component, a supplemental inspection will be performed. This inspection will ensure the integrity of the CASS components exposed to the high temperature and neutron fluence present in the reactor environment.

A.1.12 Bolting Integrity

The Bolting Integrity aging management program is an existing program that incorporates industry recommendations of EPRI NP 5769, "Degradation and Failure of Bolting in Nuclear Power Plants," and includes periodic visual inspections of closure bolting for loss of bolting function. Inspection of Class 1, 2, and 3 components is conducted in accordance with ASME Section XI. The requirements of ASME Section XI will be implemented in accordance with 10 CFR 50.55(a). The Oyster Creek program addresses the guidance contained in EPRI TR-104213, Bolted Joint Maintenance & Applications Guide, however the report is not specifically cited as a reference in the Exelon corporate or stations' specific bolted joint inspection/repair procedures. Site procedures will be enhanced to include reference to EPRI TR-104213, Bolted Joint Maintenance & Application Guide, December 1995.

Non-ASME Class 1, 2 and 3 bolted joint inspections rely on detection of visible leakage during maintenance or routine observation. **If these pressure retaining bolted joint connections are observed to be leaking, then the leakage is evaluated as part of the corrective action process. The corrective action process may allow for pressure retaining components (not covered by ASME Section XI) that are reported to be leaking to be inspected daily. If the leak rate does not increase, the inspection frequency may be decreased to biweekly or weekly.**

The Bolting Integrity program does not address Primary Containment pressure retaining, structural and component support bolting. Primary Containment pressure retaining bolting are addressed by ASME Section XI, Subsection IWE, B.1.27. The Structures

Monitoring Program, B.1.31 addresses the aging management of structural bolting. The ASME Section XI, Subsection IWF program, B.1.28, addresses aging management of ASME Section XI Class 1, 2, and 3 and Class MC support members.

A.1.23 Reactor Vessel Surveillance

The Oyster Creek Reactor Vessel Surveillance aging management program is an existing program that monitors the effects of neutron embrittlement on the reactor vessel beltline materials. The program is based on the BWR Integrated Surveillance Program (ISP) and satisfies the requirements of 10 CFR 50, Appendix H. The Reactor Vessel Surveillance program is based upon BWRVIP-78, "BWR Vessel and Internals Project: BWR Integrated Surveillance Program Plan", and BWRVIP-86-A, "BWR Vessel and Internals Project Updated BWR Integrated Surveillance Program (ISP) Implementation Plan". The program will ensure coupon availability during the period of extended operation by saving withdrawn coupons for future reconstitution.

Oyster Creek will enhance the program to implement BWRVIP-116 "**BWR Vessel and Internals Project** Integrated Surveillance Program (ISP) Implementation for License Renewal," **including the conditions specified by the NRC in its Safety Evaluation dated February 24, 2006.**

If the Oyster Creek standby capsule is removed from the RPV without the intent to test it, the capsule will be stored in a manner that maintains it in a condition which would permit its future use, including during the period of extended operation, if necessary.

A.1.27 ASME Section XI, Subsection IWE

The ASME Section XI, Subsection IWE aging management program is an existing program based on ASME Code and complies with the provisions of 10 CFR 50.55a. The program consists of periodic inspection of primary containment surfaces and components, including integral attachments, and containment vacuum breakers system piping and components for loss of material, loss of sealing, and loss of preload.

Examination methods include visual and volumetric testing as required by the Code. Observed conditions that have the potential for impacting an intended function are evaluated for acceptability in accordance with ASME requirements or corrected in accordance with corrective action process. Procurement controls and installation practices, defined in plant procedures, ensure that only approved lubricants and tension or torque are applied to bolting.

In accordance with commitments made during the Oyster Creek license renewal application review process, the program will be enhanced to include:

1. Ultrasonic Testing (UT) thickness measurements of the drywell shell in the sand bed region will be performed on a frequency of every 10 years, except that the initial inspection will occur prior to the period of extended operation and the subsequent inspection will occur two refueling outages after the initial inspection to provide early confirmation that corrosion has been arrested. Subsequent inspection frequency will be established as appropriate, not to exceed 10-year intervals. The UT measurements will be taken from the inside of the drywell at the same locations

where UT measurements were performed in 1996. The inspection results will be compared to previous results. Statistically significant deviations from the 1992, 1994, and 1996 UT results will result in corrective actions that include the following:

- Perform additional UT measurements to confirm the readings.
- Notify NRC within 48 hours of confirmation of the identified condition.
- Conduct visual inspection of the external surface in the sand bed region in areas where any unexpected corrosion may be detected.
- Perform engineering evaluation to assess the extent of condition and to determine if additional inspections are required to assure drywell integrity.
- Perform operability determination and justification for operation until next inspection.

These actions will be completed prior to restart from the associated outage.

2. A strippable coating will be applied to the reactor cavity liner to prevent water intrusion into the gap between the drywell shield wall and the drywell shell during periods when the reactor cavity is flooded.

3. The reactor cavity seal leakage trough drains and the drywell sand bed region drains will be monitored for leakage during refueling outages and during the plant operating cycle:
   - The sand bed region drains will be monitored daily during refueling outages. If leakage is detected, procedures will be in place to determine the source of leakage and investigate and address the impact of leakage on the drywell shell, including verification of the condition of the drywell shell coating and moisture barrier (seal) in the sand bed region and performance of UT examinations of the shell in the upper regions. UTs will also be performed on any areas in the sand bed region where visual inspection indicates the coating is damaged and corrosion has occurred. UT results will be evaluated per the existing program. Any degraded coating or moisture barrier will be repaired. These actions will be completed prior to exiting the associated outage.
   - The sand bed region drains will be monitored quarterly during the plant operating cycle. If leakage is identified, the source of water will be investigated, corrective actions taken or planned as appropriate. In addition, if leakage is detected, the following items will be performed during the next refueling outage:
     - Inspection of the drywell shell coating and moisture barrier (seal) in the affected bays in the sand bed region
     - UTs of the upper drywell region consistent with the existing program
     - UTs will be performed on any areas in the sand bed region where visual inspection indicates the coating is damaged and corrosion has occurred
     - UT results will be evaluated per the existing program
     - Any degraded coating or moisture barrier will be repaired

4. Prior to the period of extended operation, AmerGen will perform additional visual inspections of the epoxy coating that was applied to the exterior surface of the Drywell shell in the sand bed region, such that the coated surfaces in all 10 Drywell bays will have been inspected at least once. In addition, the Inservice Inspection (ISI) Program will be enhanced to require inspection of 100% of the epoxy coating every 10 years during the period of extended operation. These inspections will be performed in accordance with ASME Section XI, Subsection IWE. Performance of

the inspections will be staggered such that at least three bays will be examined every other refueling outage.

5. A visual examination of the drywell shell in the drywell floor inspection access trenches will be performed to assure that the drywell shell remains intact. If degradation is identified, the drywell shell condition will be evaluated and corrective actions taken as necessary. In addition, one-time ultrasonic testing (UT) measurements will be taken to confirm the adequacy of the shell thickness in these areas. Beyond these examinations, these surfaces will either be inspected as part of the scope of the ASME Section XI, Subsection IWE inspection program or they will be restored to the original design configuration using concrete or other suitable material to prevent moisture collection in these areas.

6. The coating inside the torus will be visually inspected in accordance with ASME Section XI, Subsection IWE, per the Protective Coatings Program. The scope of each of these inspections will include the wetted area of all 20 torus bays. Should the current torus coating system be replaced, the inspection frequency and scope will, as a minimum, meet the requirements of ASME Section XI, Subsection IWE.

7. AmerGen will conduct UT thickness measurements in the upper regions of the drywell shell every other refueling outage at the same locations as are currently measured.

8. The IWE Program will be credited for managing corrosion in the Torus Vent Line and Vent Header exposed to an Indoor Air (External) environment.

9. During the next UT inspections to be performed on the drywell sand bed region (reference AmerGen 4/4/06 letter to NRC), an attempt will be made to locate and evaluate some of the locally thinned areas identified in the 1992 inspection from the exterior of the drywell. This testing will be performed using the latest UT methodology with existing shell paint in place. The UT thickness measurements for these locally thinned areas may be taken from either inside the drywell or outside the drywell (sand bed region) to limit radiation dose to as low as reasonably achievable (ALARA).

10. AmerGen will conduct UT thickness measurements on the 0.770 inch thick plate at the junction between the 0.770 inch thick and 1.154 inch thick plates in the lower portion of the spherical region of the drywell shell. These measurements will be taken at one location using the 6"x6" grid. These measurements will be performed prior to the period of extended operation and repeated at the second refueling outage after the initial inspection, at the same location. If corrosion in this transition area is greater than areas monitored in the upper drywell, UT inspections in the transition area will be performed on the same frequency as those in the upper drywell (every other refueling outage).

11. AmerGen will conduct UT thickness measurements in the drywell shell "knuckle" area, on the 0.640 inch thick plate above the weld to the 2.625 inch thick plate. These measurements will be taken at one location using the 6"x6" grid. These measurements will be performed prior to the period of extended operation and repeated at the second refueling outage after the initial inspection, at the same location. If corrosion in this transition area is greater than areas monitored in the

upper drywell, UT inspections in the transition area will be performed on the same frequency as those in the upper drywell (every other refueling outage).

12. When the sand bed region drywell shell coating inspection is performed, the seal at the junction between the sand bed region concrete and the embedded drywell shell will be inspected **per the Protective Coatings Program.**

13. **The reactor cavity concrete trough drain will be verified to be clear from blockage once per refueling cycle. Any identified issues will be addressed via the corrective action process.**

ENCLOSURE 2

Changes to License Renewal Commitments

Oyster Creek Generating Station
License Renewal Application (TAC No. MC7624)

The following table identifies modifications made to previous license renewal commitments, being made in this supplemental response. The new information is displayed in bold font. Any other actions discussed in this submittal represent intended or planned actions. They are described for the NRC's information and are not regulatory commitments.

ITEM NUMBER	COMMITMENT	UFSAR SUPPLEMENT LOCATION (LRA APP. A)	ENHANCEMENT OR IMPLEMENTATION SCHEDULE	SOURCE
10) Thermal Aging and Neutron Irradiation Embrittlement of Cast Austenitic Stainless Steel (CASS)	Program is new. The program will include a component specific evaluation of the loss of fracture toughness in accordance with the criteria specified in NUREG-1801, XI.M13. **At least one year prior to the period of extended operation, the following information will be submitted to the NRC: 1) the type and composition of CASS reactor internal components within the scope of license renewal; and 2) the results of evaluations performed to determine susceptibility to thermal aging and neutron irradiation embrittlement.** For those components where loss of fracture toughness may affect the intended function of the component, a supplemental inspection will be performed. This inspection will ensure the integrity of the CASS components exposed to the high temperature and neutron fluence present in the reactor environment.	A.1.10	Prior to the period of extended operation	Section B.1.10
23) Reactor Vessel Surveillance	Existing program is credited. The program will be enhanced to implement BWRVIP-116 "**BWR Vessel and Internals Project** Integrated Surveillance Program (ISP) Implementation for License Renewal," **including the conditions specified by the NRC in its Safety Evaluation dated February 24, 2006.** If the Oyster Creek standby capsule is removed from the RPV without the intent to test it, the capsule will be	A.1.23	Prior to the period of extended operation	Section B.1.23

ITEM NUMBER	COMMITMENT	UFSAR SUPPLEMENT LOCATION (LRA APP. A)	ENHANCEMENT OR IMPLEMENTATION SCHEDULE	SOURCE
	stored in a manner that maintains it in a condition which would permit its future use, including during the period of extended operation, if necessary.			
27) ASME Section XI, Subsection IWE	Existing program is credited. The program will be enhanced to include: 1. Ultrasonic Testing (UT) thickness measurements of the drywell shell in the sand bed region will be performed on a frequency of every 10 years, except that the initial inspection will occur prior to the period of extended operation and the subsequent inspection will occur two refueling outages after the initial inspection, to provide early confirmation that corrosion has been arrested. The UT measurements will be taken from the inside of the drywell at the same locations where UT measurements were performed in 1996. The inspection results will be compared to previous results. Statistically significant deviations from the 1992, 1994, and 1996 UT results will result in corrective actions that include the following: • Perform additional UT measurements to confirm the readings. • Notify NRC within 48 hours of confirmation of the identified condition. • Conduct visual inspection of the external surface in the sand bed region in areas	A.1.27	Prior to the period of extended operation Prior to the period of extended operation, and then two refueling outages after that. Subsequent inspection frequency will be established as appropriate, not to exceed 10-year intervals	Section B.1.27

ITEM NUMBER	COMMITMENT	UFSAR SUPPLEMENT LOCATION (LRA APP. A)	ENHANCEMENT OR IMPLEMENTATION SCHEDULE	SOURCE
	where any unexpected corrosion may be detected. • Perform engineering evaluation to assess the extent of condition and to determine if additional inspections are required to assure drywell integrity. • Perform operability determination and justification for operation until next inspection. These actions will be completed prior to restart from the associated outage. 2. A strippable coating will be applied to the reactor cavity liner to prevent water intrusion into the gap between the drywell shield wall and the drywell shell during periods when the reactor cavity is flooded. 3. The reactor cavity seal leakage trough drains and the drywell sand bed region drains will be monitored for leakage. • The sand bed region drains will be monitored daily during refueling outages. If leakage is detected, procedures will be in place to determine the source of leakage and investigate and address the impact of leakage on the drywell shell, including verification of the condition of the drywell shell coating and moisture barrier (seal) in the sand bed region and performance of UT examinations of the shell in the upper		Refueling outages prior to and during the period of extended operation Periodically Daily during refueling outages	

ITEM NUMBER	COMMITMENT	UFSAR SUPPLEMENT LOCATION (LRA APP. A)	ENHANCEMENT OR IMPLEMENTATION SCHEDULE	SOURCE

	regions. UTs will also be performed on any areas in the sand bed region where visual inspection indicates the coating is damaged and corrosion has occurred. UT results will be evaluated per the existing program. Any degraded coating or moisture barrier will be repaired. These actions will be completed prior to exiting the associated outage.
	• The sand bed region drains will be monitored quarterly during the plant operating cycle. If leakage is identified, the source of water will be investigated, corrective actions taken or planned as appropriate. In addition, if leakage is detected, the following items will be performed during the next refueling outage:
	  • Inspection of the drywell shell coating and moisture barrier (seal) in the affected bays in the sand bed region
	  • UTs of the upper drywell region consistent with the existing program
	  • UTs will be performed on any areas in the sand bed region where visual inspection indicates the coating is damaged and corrosion has occurred
	  • UT results will be evaluated per the existing program
			Quarterly during non-outage periods	

ITEM NUMBER	COMMITMENT	UFSAR SUPPLEMENT LOCATION (LRA APP. A)	ENHANCEMENT OR IMPLEMENTATION SCHEDULE	SOURCE
	Any degraded coating or moisture barrier will be repaired. 4. Prior to the period of extended operation, AmerGen will perform additional visual inspections of the epoxy coating that was applied to the exterior surface of the Drywell shell in the sand bed region, such that the coated surfaces in all 10 Drywell bays will have been inspected at least once. In addition, the Inservice Inspection (ISI) Program will be enhanced to require inspection of 100% of the epoxy coating every 10 years during the period of extended operation. These inspections will be performed in accordance with ASME Section XI, Subsection IWE. Performance of the inspections will be staggered such that at least three bays will be examined every other refueling outage. 5. A visual examination of the drywell shell in the drywell floor inspection access trenches will be performed to assure that the drywell shell remains intact. If degradation is identified, the drywell shell condition will be evaluated and corrective actions taken as necessary. In addition, one-time ultrasonic testing (UT) measurements will be taken to confirm the adequacy of the shell thickness in these areas. Beyond these examinations, these surfaces will either be inspected as part of the scope of the ASME Section XI, Subsection IWE inspection program or they will be restored to the original		Prior to the period of extended operation and every ten years during the period of extended operation Prior to the period of extended operation	

ITEM NUMBER	COMMITMENT	UFSAR SUPPLEMENT LOCATION (LRA APP. A)	ENHANCEMENT OR IMPLEMENTATION SCHEDULE	SOURCE
	design configuration using concrete or other suitable material to prevent moisture collection in these areas.			
	6. The coating inside the torus will be visually inspected in accordance with ASME Section XI, Subsection IWE, per the Protective Coatings Program. The scope of each of these inspections will include the wetted area of all 20 torus bays. Should the current torus coating system be replaced, the inspection frequency and scope will, as a minimum, meet the requirements of ASME Section XI, Subsection IWE.		Every other refueling outage prior to and during the period of extended operation	
	7. AmerGen will conduct UT thickness measurements in the upper regions of the drywell shell every other refueling outage at the same locations as are currently measured.		Every other refueling outage prior to and during the period of extended operation	
	8. The IWE Program will be credited for managing corrosion in the Torus Vent Line and Vent Header exposed to an Indoor Air (External) environment.			
	9. During the next UT inspections to be performed on the drywell sand bed region (reference AmerGen 4/4/06 letter to NRC), an attempt will be made to locate and evaluate some of the locally thinned areas identified in the 1992 inspection from the exterior of the drywell. This testing will be performed using the latest UT methodology with existing shell paint in place. The UT thickness measurements for these locally thinned areas may be taken from either		Prior to the period of extended operation	

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	inside the drywell or outside the drywell (sand bed region) to limit radiation dose to as low as reasonably achievable (ALARA).			
	10. AmerGen will conduct UT thickness measurements on the 0.770 inch thick plate at the junction between the 0.770 inch thick and 1.154 inch thick plates, in the lower portion of the spherical region of the drywell shell. These measurements will be taken at one location using the 6"x6" grid. These measurements will be performed prior to the period of extended operation and repeated at the second refueling outage after the initial inspection, at the same location. If corrosion in this transition area is greater than areas monitored in the upper drywell, UT inspections in the transition area will be performed on the same frequency as those in the upper drywell (every other refueling outage).		Prior to the period of extended operation and two refueling outages later	
	11. AmerGen will conduct UT thickness measurements in the drywell shell "knuckle" area, on the 0.640 inch thick plate above the weld to the 2.625 inch thick plate. These measurements will be taken at one location using the 6"x6" grid. These measurements will be performed prior to the period of extended operation and repeated at the second refueling outage after the initial inspection, at the same location. If corrosion in this transition area is greater than areas monitored in the upper drywell, UT inspections in the transition area will		Prior to the period of extended operation and two refueling outages later	

ITEM NUMBER	COMMITMENT	UFSAR SUPPLEMENT LOCATION (LRA APP. A)	ENHANCEMENT OR IMPLEMENTATION SCHEDULE	SOURCE
	be performed on the same frequency as those in the upper drywell (every other refueling outage).			
	12. When the sand bed region drywell shell coating inspection is performed (commitment 27, item 4), the seal at the junction between the sand bed region concrete and the embedded drywell shell will be inspected per the Protective Coatings Program.		**Coincident with the sand bed region drywell shell coating inspection**	
	13. The reactor cavity concrete trough drain will be verified to be clear from blockage once per refueling cycle. Any identified issues will be addressed via the corrective action process.		**Once per refueling cycle**	