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OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF THE SECRETARY  
BEFORE THE COMMISSION

In the Matter of )  
 )  
AMERGEN ENERGY COMPANY, LLC )  
 )  
(License Renewal for the Oyster Creek )  
Nuclear Generating Station) )

Docket No. 50-0219-LR

January 23, 2009

**COMMISSION NOTIFICATION**

**I. INTRODUCTION**

In accordance with their obligation to inform the Commission of new information that is relevant and material to the pending appeal of LBP-07-17,<sup>1</sup> Nuclear Information and Resource Service, Jersey Shore Nuclear Watch, Inc., Grandmothers, Mothers and More for Energy Safety, New Jersey Public Interest Research Group, New Jersey Sierra Club, and New Jersey Environmental Federation (collectively "Citizens") hereby provide this notification regarding findings of the NRC Staff during an inspection carried out in October and November 2008. The events during this refueling outage have been the subject of at least one notification by the NRC Staff, dated November 6, 2008, and two by AmerGen Energy Co. LLC ("AmerGen"), dated November 6 and November 17. On January 21, 2009, the NRC Staff published the inspection report No. 05000219/2008007 (the "Report"), which is available on ADAMS as document number ML090210106. Because the Report provides a much more complete picture of the

<sup>1</sup> Initial Decision, In the Matter Of AmerGen Energy Co, LLC (License Renewal for Oyster Creek Nuclear Generating Station, LBP-07-17 (December 18, 2007) (the "Decision").

TEMPLATE = SECF 041

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outcome of the inspection and that information is material to relicensing, Citizens are providing this notification to the Commission.<sup>2</sup>

## **II. MATERIAL ISSUES RAISED BY THE REPORT<sup>3</sup>**

The information in the Report contradicts three critical findings made by the Atomic Safety and Licensing Board (“ASLB” or “Board”) and therefore undermines the overall finding that the aging management program for the drywell shell to which AmerGen has committed would provide reasonable assurance of adequate protection during any extended period of operation. The critical findings that the inspection report contradicts are: i) visual inspections alone are adequate to detect the onset of corrosion and coating degradation; ii) only source of water that could enter the drywell is from the refueling cavity; and iii) the committed measures are insufficient to determine when water is present in the sand bed region. Furthermore, the inspection report shows that loss of material due to aging in at least some piping is significant and requires additional aging management. The Commission therefore cannot currently find that the proposed aging management programs are sufficient to provide reasonable assurance that the reactor will operate in accordance with its current licensing basis (“CLB”) during any extended period of operation.

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<sup>2</sup> Out of an overabundance of caution, Citizens have consulted NRC Staff and AmerGen about this notification. The Staff had no objection to the transmission of the inspection report and AmerGen reserved comment.

<sup>3</sup> Counsel for Staff informed Citizens that a notification should not include argument about pending contentions. However, AmerGen provided argued that the new information that was the subject of its notification dated November 17, 2008 was not significant in terms of the Decision and Staff made no objection to that notification. Furthermore, an affirmation session regarding Oyster Creek has been tentatively scheduled for February 4, 2009. Citizens therefore believe it is important for the Commission to be fully informed prior to that date and so have included an analysis of the significance of the information in the Report to assist the Commission.

### **A. Visual Inspections Have Repeatedly Failed To Find Ongoing Corrosion**

In its Decision the Board cited favorably to the testimony of four AmerGen witnesses and one NRC Staff witness, all of whom agreed that the epoxy coating on the exterior of the drywell in the sandbed region was not degraded at all. Decision at 41-42, 45. This testimony was based either on direct observation or observation of the video tapes. *Id.* at 41-42. The NRC Staff witness apparently checked either the tapes or directly inspected the coating in each bay to check on the accuracy of the visual inspection. Decision at 42. However, the Report now confirms that that a six inch rust stain and blister was present in 2006, and is visible on the video. Report at 11. Thus, the testimony of both AmerGen and Staff witnesses about the state of the epoxy coating was erroneous.

Furthermore, AmerGen witnesses, with whom the Board concurred, also stated that visual observations would be sufficient to detect the early stage of coating failure. Decision at 38, 40-41. In addition, the Report states that Exelon concluded that the corrosion had taken place over approximately 16 years. Report at 11. The broken blister with a rust stain, which the inspection in 2006 failed to find, is a late stage of coating failure. Earlier signs of coating failure are unbroken blisters. Report at 11. Because it is more difficult to see unbroken blisters without any staining, the failure to spot the broken blister with a rust strain in 2006 completely discredits the claim that visual observation alone can reliably find the early stages of coating failure.

Overall, the Report shows that, contrary to the Board's finding, Decision at 38, visual observation alone cannot provide reasonable assurance that ongoing corrosion will be detected.

### **B. Water From Multiple Sources Is Probably Entering The Sandbed Region**

Relying upon evidence that no water was found in the sandbed region in 2006, Decision at 33, and that Amergen has enhanced its commitments regarding the prevention of leakage from

the refueling cavity into the sandbed region, the Board found that the refueling cavity was the only source of corrosive-causing water that could enter the sand bed region, the commitments eliminated the potential for leaking from the refueling cavity, and in the absence of such leakage, there would be no further corrosion. Decision at 36.

The Report directly contradicts the second of these findings because in 2008, water from the refueling cavity leaked into four bays in the sandbed region, despite the implementation of the committed leakage prevention and control measures. Report at 7-8. Furthermore, three other findings in the report suggest that other sources of water may be entering the drywell. First, a poly bottle connected to the floor drain from Bay 11 contained water on November 15, even though it had been empty on November 14. Report at 6. This water could not have come from the reactor cavity because it had been drained on November 12, and all the Bays had been dried and inspected for moisture thereafter, without anything being found. *Id.* at 7. Radiological and chemical analysis of the water in the bottle did not shed any light on its origin. *Id.* at 6.

Second, despite the absence of water in sand bed during the 2006 outage, three unbroken blisters were found in 2008. *Id.* at 11. The Report states that Exelon reviewed the 2006 video of the sand bed and found the broken blister, but makes no mention of the three unbroken blisters. *Id.* In the absence of any further information, it therefore appears that these blisters formed between 2006 and 2008. Because the reactor cavity was empty during this time, the water that caused these blisters is unlikely to have come from the reactor cavity. Finally, the torus room floor had standing water upon it during most of the outage from “other identified system leaks.” Report at 6. Citizens know of no evidence showing that that AmerGen has verified that these other leaks could not enter the sandbed region. Because AmerGen bears the burden of proof in

licensing proceedings, the Commission should conclude that if these leaks can reach the torus room, it is also likely that they could reach the sandbed region of the drywell.

Three separate pieces of evidence therefore indicate that there is probably an additional source of water to the sandbed region apart from the refueling cavity. First, the bottle collecting the Bay 11 drainage filled when the cavity was empty and the Bays had been dried. Second, corrosion-related blisters probably formed between 2006 and 2008. As the Board noted, these blisters would not form in the absence of water. Thus, there must have been a source of water other than the refueling cavity to enable these blisters to form. Citizens trust that NRC experts are carefully examining the analyses of the collected water to confirm where it came from. Finally, the torus room floor was wet most of the time showing that leakage at the plant is pervasive. Given this evidence, it is impossible to conclude with reasonable assurance that the refueling cavity is the only source of water that could leak to the sandbed region.

### **C. The Committed Measures Are Insufficient To Determine When Water Is Present In The Sand Bed Region**

The Board concluded that water that reached the sandbed floor would flow to the drains, even though the epoxy on the floor was not intended to be a moisture barrier. Decision at 46 n. 48. This footnote rejected one of the many reasons that Citizens had alleged could allow water to be present in the sandbed region, but not flow to the drains and be seen in the bottles. Citizens Ex. B A.18 (Initial Testimony of Dr. Hausler). The Report confirms the presence of dripping water in Bay 11 on November 8, 2008, and puddles of water on the floor of Bays 13, 15, and 17. Report at 7. However, while the Report notes that the bottles connected to the drains were monitored every four hours up to November 12, 2008, *id.*, and daily thereafter, *id.* at 6, no water was found in the bottle that drained Bay 11 prior to November 15, *id.*, and the Report contains no mention of the discovery of water in other bottles. Thus, the Report shows directly that Dr.

Hausler was correct and water can be present in the sand region, but not be detected in the bottles, even when they are actually connected to drains, as intended.<sup>4</sup>

This means that AmerGen's failure to find water during operation in the bottles collecting the sandbed drainage does not mean that water is not present in the sandbed region during operation.

**D. The Board's Conclusion Regarding The Aging Management Program For The Drywell Is No Longer Valid**

Ultimately, the Board decided to assume that some water could reach the sandbed region and could penetrate the coating. Decision at 49-50: Thus, the Board's decision did not rest on incorrect sworn assurances from AmerGen witnesses that water would not enter the sandbed region because it would be caught by the trough drain, Decision at 36, or that absent immersion, water could not penetrate the epoxy coating. AmerGen Notification dated November 17, 2008 at 3 n. 2.

The Decision actually rested upon the premise that water could only be present in the drywell for 30 days because the refueling cavity was the only source of water that could reach the sandbed any water present would evaporate rapidly. Decision at 50. The Board assumed a corrosion rate of 0.039 inches per year for external corrosion during these 30 day periods, which it assumed would occur once every two years. *Id.* at 50-51. This reduced the average external corrosion rate to 0.0015 inches per year. *Id.* at 51. The Board then made an allowance for possible internal corrosion at 0.002 inches per year and therefore concluded the maximum

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<sup>4</sup> Over November 10, 2008, Exelon found that two of the five tubes connecting the bottles to the drains were disconnected. Report at 6. It appears that no check of this basic requirement had been carried out, because "Exelon personnel could not determine when the tubing was last verified to be connected to the funnel." *Id.* However, these tubes came from Bays 3 and 7, *id.*, so do not affect Citizens conclusion that water can be present in the Bays, but not drain to the bottles.

corrosion rate could be at most about 0.0035 inches per year. Decision at 17, 50. The Board then concluded that over 4 years the maximum amount of corrosion could be 0.014 inches, which is only a quarter of the limiting margin the Board found. *Id.*

The Report shows that it is possible that water is present in the sandbed region at times other than during refueling. This may be because there are sources of water other than the refueling cavity or because when a blister forms, the coating prevents the evaporation of the water. The Report also shows that water could be present in the drywell, but would not drain to the bottles connected to the drains. Furthermore, the Report shows that even longstanding corrosion can repeatedly evade detection by visual inspection.

Redoing the Board's calculations to reflect the reality shown by the Report, the maximum corrosion rate would be 0.039 inches per year externally, because water could be continually present in the drywell during operation without being detected. Allowing for the possibility of internal corrosion at 0.002 inches per year, the maximum corrosion rate would be 0.041 inches per year. This corrosion rate would use up the available margin that the Board found within 1.5 years. This shows that the proposed inspection frequency of every four years is inadequate. Furthermore, if visual detection alone is used, the corrosion could be missed in one or more inspections. This shows that AmerGen should augment its visual inspections with other techniques.

### **E. The Reports Shows That The Aging Management For The Piping Is Inadequate<sup>5</sup>**

With regard to certain piping systems, AmerGen committed to perform a “one-time inspection program” in order to provide reasonable assurance that aging was not significant and therefore would not need additional aging management. Safety Evaluation Report for Oyster Creek, dated April 2007 (“SER”) at Appendix A Item 24. Such inspections had not been previously carried out. *See id.* (stating “this program is new). The Report shows that at two out of 24 measured locations the aging was so significant that the pipe thickness was below the acceptance criteria. Report at 15. It then states without elaboration “the results were evaluated within the corrective action programs.” *Id.*

Although the available information is sparse, it is all that Citizens and the Commission have available at this time. In the absence of further explanation, the available information shows that the one-time inspection program confirmed precisely the opposite of what was intended, that aging of the inspected pipes is significant and therefore additional aging management is required. The logical conclusion is that because the one-time inspection using ultrasonic testing (“UT”) found significant aging, at minimum, ongoing periodic UT inspections are required to adequately manage future aging. Because this inspection was a one off, Citizens conclude that at present AmerGen does not have an ongoing UT inspection program in place for the pipes.<sup>6</sup> Therefore the Commission cannot currently issue a new license, because no further

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<sup>5</sup> Citizens recognize that this issue was not raised previously. However, it is based upon new information that only came into Citizens’ possession on January 21, 2009. Citizens are currently attempting to obtain more information on this issue and note that they have at least 30 days from January 21, 2009 to determine whether to file a new contention regarding this issue.

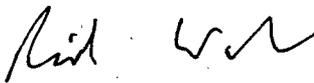
<sup>6</sup> Citizens checked ADAMS on January 23, 2009 and found no proposal by AmerGen to enhance the commitment for the aging management of the pipes.

actions have been identified that provide reasonable assurance that the pipes will continue to meet CLB requirements. 10 C.F.R. § 54.29.

### III. CONCLUSION

For the foregoing reasons, the Report contradicts AmerGen's assertion in its November 17, 2008 notification that the aging management program ("AMP") for the drywell shell remains adequate. In fact, the drywell AMP is inadequate both for reasons raised in Citizens' appeal and for the reasons stated above. In addition, the Commission can no longer rely upon the Decision of the Board because the Report shows that the Decision is incorrect in at least three critical ways, so that the Board's ultimate conclusions are no longer valid. Furthermore, because the one-time inspection confirmed that some piping has deteriorated to below the acceptance criteria, the Commission must ensure an effective AMP for the piping is in place prior to the issuance of any renewed license.

Respectfully submitted,



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Dated: January 29, 2008

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of	)	
	)	Docket No. 50-0219-LR
AMERGEN ENERGY COMPANY, LLC	)	
	)	
(License Renewal for the Oyster Creek	)	
Nuclear Generating Station)	)	January 23, 2009

CERTIFICATE OF SERVICE

I, Richard Webster, of full age, certify as follows:

I hereby certify that on January 23, 2009, I caused Citizens' Notification to be served via email and U.S. Postal Service (as indicated) on the following:

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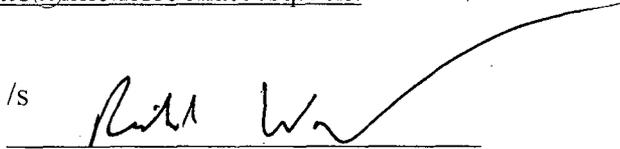
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Signed: <sup>/s</sup>   
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