

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
OFFICE OF THE SECRETARY

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:
E. Roy Hawkens, Chair
Dr. Paul B. Abramson
Dr. Anthony J. Baratta

In the Matter of)

AMERGEN ENERGY COMPANY, LLC)

(License Renewal for the Oyster Creek
Nuclear Generating Station))

) January 23, 2007

) Docket No. 50-0219-LR

**CITIZENS' COMBINED REPLY TO AMERGEN'S AND NRC STAFF'S ANSWER TO
THEIR PETITION TO ADD NEW CONTENTIONS**

PRELIMINARY STATEMENT

In their Answers to the Petition to Add New Contentions (the "Petition") filed by 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" or "Petitioners"), AmerGen Energy Co. LLC ("AmerGen") and the Staff of the Nuclear Regulatory Commission ("Staff") appear not to understand the facts or their import, and then seek to apply legal standards on timeliness and raising of a material dispute that would make it virtually impossible for Citizens to ever add contentions during the course of a relicensing proceeding. The mere fact that Citizens have actually been able to add one contention during this proceeding illustrates that the Staff and AmerGen are mistaken about the legal standards to be applied. Furthermore, if the standards postulated by AmerGen and the Staff were correct, Citizens would be denied their statutory right to a hearing when they are able to raise valid technical issues.

Although AmerGen and the Staff complain that Citizens' new contentions are not based on new information, there is no doubt that the discovery of wet conditions in the concrete floor on the interior of

the drywell is new and unexpected, as was the apparent thinning of the drywell shell in the sandbed region. There is also no dispute that the discovery of these conditions is highly significant. Indeed, these conditions are so significant that AmerGen decided to enhance its aging management programs in response to them. The key dispute here is whether those enhancements go far enough to ensure that the drywell liner will meet safety requirements during any extended period of operation. AmerGen believes that they will, while Citizens believe that they will not. This is the material dispute that requires adjudication before the Atomic Safety and Licensing Board (“ASLB” or “Board”).

In addition to the formalistic pleading requirements, which Citizens have met, the Board should also consider the need for public participation in relicensing decisions. The public’s sagging trust in the ability of the Nuclear Regulatory Commission (“NRC”) to ensure that the nation’s aging nuclear power plants can be operated safely for twenty years beyond their originally licensed operating period could only be restored by an open process. Thus, the ASLB should grant Citizens’ new contentions even if Citizens had not met the formalistic pleading requirements that the Part 2 rules deploy to erect artificial barriers to the filing and adjudication of technically meritorious contentions.

ARGUMENT

I. Undisputed Issues

This proceeding concerns AmerGen’s ability to ensure that the drywell shell, which forms the primary containment system at the Oyster Creek Nuclear Power Plant, does not decay below acceptable safety margins during any extended period of licensed operation beyond April 2009, when the Plant is currently scheduled to close. The containment system is a safety critical component whose failure could lead to an inability to contain products from a nuclear accident and under certain circumstances could even initiate a nuclear accident.

There is also no dispute that the proposed contentions are within the scope of the proceeding, that Citizens have standing, that the contentions were properly stated, and they have an adequate basis. Neither the Staff nor the NRC has raised the issue of basis, and so that issue was conceded by both

opposing parties. To the extent that basis is in dispute Citizens show in the Section on material dispute that they have ample basis for the new contentions.

II. The New Contentions Are Timely

Both AmerGen and the Staff overstate the requirements for a timely new contention by arguing erroneously that the seven-factor test in 10 C.F.R. § 2.309(c)(1) applies. This is incorrect, as the ASLB recognized when it stated that when basing new contentions on new commitments “the parties need not address the requirements under 10 C.F.R. § 2.309(c), which apply to ‘nontimely filings.’” See Entergy Nuclear Vermont Yankee L.L.C. (Vermont Yankee Nuclear Power Station), LBP-06-14, 63 NRC __, __-__ & n.14 (slip op. at 3-7 & n.14) (May 25, 2006).” LBP-06-16, slip op. at n. 12. This is hardly surprising because a contention based on information that was first revealed 20 to 30 days prior to filing is simply not “late-filed.” The late-filed standards actually apply to situations where parties attempt to add contentions outside the 20 to 30 day period after material new information emerges.

In addition, even if the 10 C.F.R. § 2.309(c)(1) standard applies, Citizens meet that standard, because they could not have filed before the new condition and its associated aging management program was established, the request will not delay the proceeding because one contention has already been admitted, Citizens include individuals who live close to the plant and have intense interest in its ongoing safety, and the ASLB process is the best way of addressing the issues raised by the proposed contentions because it allows for discovery.

Further illustrating the nature of the timeliness enquiry, the ASLB admitted the pending contention regarding frequency of ultrasonic testing (“UT”) monitoring in the sandbed, because it was based on a new commitment to establish a UT testing regime in the sandbed that was materially different in terms of frequency to those commitments that came before. LBP-06-22, slip op. at 14-20, 28-30. In contrast, it found a contention about the spatial scope of the measurements was not timely because the scope had not changed in the new commitments. Thereafter, in ruling on a motion for reconsideration, the ASLB recognized that an appropriate time to contend that the scope of the proposed UT testing was

inadequate would have been soon after AmerGen proposed to monitor the sandbed region using UT for the first time. LBP-06-_____ (November 20, 2006) available at ML063240454, slip op. at 5-6.

The Staff simply misstate the requirements of 10 C.F.R. §2.309(f)(2)(i)-(iii). Contrary to the Staff's assertion, there is no requirement for new contentions to be based *solely* on information that was not previously available. Staff Ans. at 13. Instead, as the ASLB's decision about the pending contention illustrated, new contentions may be based on a materially different new commitment, coupled with previously available or new information that shows that there is a dispute about the adequacy of the new commitment. In an attempt to refute this logic, both AmerGen and the Staff quote the ASLB's statement that the enhancement of an existing program does not necessarily allow Citizens to file a new contention based on that enhancement. AmerGen Ans. at 8, Staff Ans. at 3-4.

This latter finding is irrelevant to the two contentions at issue because both were added by AmerGen as part of a new aging management regime in response to a new finding that water has been present on the *inside* of the drywell since at least 1994, and is likely to continue to be there. See, E.g. Letter from NRC to C. Crane, dated January 17, 2007 enclosing summary of results of in-service inspection from October 16 to December 6, 2006 ("Inspection Report") available as ML070170396 ("water was discovered in the drywell trenches [inside the drywell] The presence of water was not expected by AmerGen. . . . AmerGen determined that an environment/material/aging effect combination exists that had not been previously included in the Oyster Creek license renewal application. AmerGen's letter to the NRC (2103-06-20426), dated December 3, 2006 addresses this issue. . . ."); see also Ex. ANC 1 at 2 ("as a result of performing planned inspections [in October 2006] of the internal surface of the drywell shell trenches excavated in the concrete floor in 1986, AmerGen identified an environment/material/aging effect combination that was not included in the LRA.")

Comments by AmerGen presenters at the meeting of the ACRS on January 18, 2007 confirmed that the finding of the wet interior condition was new and unexpected. Mr. Gordon described it as "surprise water." Transcript of ACRS meeting on January 18, 2007 ("T.") at 210:17-19. Further, refuting AmerGen's argument in its Answer that the assumption that water is in contact with the interior shell is

not grounded in reality, Mr. Gallagher stated “We believe that the whole inside of the drywell below the floor has water in there.” T. at 217:2-3. Mr. Gallagher then confirmed that AmerGen believes that “there’s water in this lower part of the sphere . . .between the concrete and the shell.” T. at 217:4-9. Thus, AmerGen made the December 3, 2006 commitments to address a previously unanticipated aging effect: corrosion from the *inside* of the drywell. Instead of enhancing an existing aging management program, these commitments were designed to establish a new aging management program to deal with the potential for interior corrosion.

Furthermore, the commitments are materially different to those previously made. With regard to the commitment to measure the embedded region using UT, measurements in this area had never been done prior to the October 2006 outage. ANC 1 at 20 (the newly exposed area of the embedded region has not been examined since it was encased in concrete during initial construction before 1969). It is therefore completely new and, as such, materially different from the previous commitments, which proposed to take no measurements at all. In fact, the December 3, 2006 commitment to monitor the embedded region using UT for the first time is analogous to the December 9, 2005 commitment to monitor the sandbed for the first time. Thus, according to the law of the case, the contention regarding the embedded region is timely.

Turning to the commitment to measure the thickness of the sandbed region from the exterior, this is required because the previously committed measurements to track corrosion from the interior of the sandbed cannot track corrosion in the sandbed below the interior concrete floor. Thus, measurements from the *exterior* are required to track corrosion that could occur on the interior of the sandbed *below* the interior concrete floor, but above the exterior concrete floor. Although AmerGen had previously taken measurements from the sandbed exterior, those were not designed to measure interior corrosion and were undertaken as a one-time effort in 1992. Without making a commitment, AmerGen decided to carry out measurements from the exterior in October 2006 to demonstrate lack of corrosion in the sandbed. However, those measurements actually showed a systematic thinning of the sandbed in the region below the concrete floor. Ex. ANC 2 at 6-12, Table 2; Ex. ANC 1 at 14. Coupled with the discovery of water

on the interior, these results are consistent with ongoing corrosion below the interior floor. Id. Thus, AmerGen committed to take exterior measurements during 2008 and periodically thereafter. Id. at 14-15. There is no dispute that this commitment is new and it is designed to specifically address a newly discovered environment/material/aging effect combination that was not included in the LRA. Therefore, while this new commitment may incidentally serve to enhance the tracking of exterior corrosion, AmerGen's own documents show that this is not its primary purpose and was not the intent of the commitment.

In their Answer, the Staff appear confused about the distinction between water on the exterior of the drywell, which is concededly not new, and water on the interior, which was unexpected by AmerGen, Staff and Citizens. Staff Ans. at 10-12. The Staff also fail to note that the previous contention about the scope of monitoring was about the program designed to monitor corrosion on the *exterior* of the drywell shell not the *interior*. Id. at 13.

In attempt to show that the new contention regarding the exterior measurements is not timely AmerGen argues three things. First, it claims that because the locations chosen for the exterior measurements are the same as those chosen in 1992, Citizens are untimely in their challenge to these locations. AmerGen Ans. at 22. This is entirely illogical. Although the Board previously ruled that a contention regarding the spatial scope of the UT measurements was not timely when AmerGen enhanced the frequency of the UT measurements, but did not change the spatial scope, LBP-06-22, slip op. at 28-30, that finding does not bar a contention based on a new commitment that significantly changes the spatial scope of the measurements. Furthermore, although AmerGen is measuring the same locations that were measured in 1992, those measurements were taken as part of a program designed to measure corrosion occurring in the sandbed from the exterior. AmerGen is now using a similar spatial scope for an entirely different purpose: to measure corrosion potentially occurring on the interior. Indeed, AmerGen's failure to redesign the scope in response to the new conditions is precisely why Citizens are contending that the scope of the measurements is inadequate to measure such corrosion.

Second, AmerGen attempts to suggest that, contrary to the plain meaning of AmerGen's own documents, the words of its presenters at the ACRS, and the Inspection Report, the potential for interior corrosion is not new. AmerGen Ans. at 22. In fact, the Inspection Report shows that AmerGen should have known about the interior water issue because it was noted in reports issued between 1992 and 1995, but AmerGen did not include interior corrosion in the Oyster Creek LRA. Inspection Report at 9. In making its argument, AmerGen appears to conflate the issue of the potential for exterior corrosion in the embedded region, which Citizens have always maintained is a possibility, with the potential for interior corrosion in the sandbed region, which Citizens have not previously raised.

Third, AmerGen accuses Citizens of previously raising a similar contention. AmerGen Ans. at 22-23. It is certainly true that Citizens previously attempted to add a contention about the spatial scope of the UT monitoring designed to track corrosion on the exterior of the drywell shell. However, that contention did not concern the need to track interior corrosion, which is the basis of the current contention. Thus, although the two contentions might superficially appear similar, they actually have significantly different bases, which lead to different conclusions about the correct approach to sampling. For example, as Dr. Hausler has noted, to track interior corrosion, the spatial scope must cover the area just below the level where the air/water interface occurs in the interior floor. Ex. ANC 4 at 4. In contrast, to check on exterior corrosion, sampling would be best concentrated in areas where water has been observed on the exterior.

III. The Contentions Raise Material Disputes

In trying to argue that the contentions present no material dispute, AmerGen demonstrates the opposite. For example, AmerGen totally misconstrues Dr. Hausler's opinion by stating it would predict a bathtub ring at an elevation of approximately 12 feet. AmerGen Ans. at 24. In fact, Dr. Hausler is predicting a bathtub ring, but at the air-water interface in the interior concrete, which would be expected to be close to the top of the interior floor. This prediction is confirmed by experience at other BWRs. Interior corrosion of Mark I containments has been observed at a number of other BWRs at the junction

of the bottom concrete floor and the steel shell. Safety Evaluation Report (December 2006) available at ML063630424 (“SER”) at 4-73.

AmerGen then alleges that if such a ring of corrosion were present, it would have been seen when the two trenches were excavated in 1986. AmerGen Ans. at 25. However, this is simply incorrect. Water was not observed when the trenches were excavated in 1986. T. 221:3-5. The first record of water being present on the inside of the drywell is from 1992. Inspection Report at 9. Thus, it is likely that interior corrosion did not start before 1992; it is therefore hardly surprising that in 1986 no bathtub ring of corrosion was observed. Furthermore, because the trenches were filled with some kind of polymer and not concrete, the conditions in the trenches since 1986 are not representative of the conditions in the rest of the interior where there is a wet concrete-steel interface.

Finally, AmerGen suggests that a concern about interior corrosion is unwarranted because the interior atmosphere is inerted with nitrogen during operation. AmerGen Ans. at 25. However, the atmosphere is not completely inert, but is controlled to less than 5% oxygen during operation. In addition, AmerGen’s own documents suggest that interior corrosion is a possibility. Ex. ANC 1 at 14. Furthermore, empirically we know from operating experience at other reactors that interior corrosion occurs. SER at 4-73. Finally, the latest monitoring results from the exterior monitoring program appear to be consistent with interior corrosion, Ex. ANC 2 at 6-12 (Table 2), although the detailed analysis cannot be performed until Citizens receive the complete results from AmerGen.

Turning to the embedded region, AmerGen tries to suggest that because the regulations do not require “worst-case” analysis, measuring the embedded region in the least corroded bay is acceptable. AmerGen Ans. at 17 to 19. However, this is simply a sleight of hand. In fact, the amount of corrosion in bay 5 in the embedded region is very similar to the amount of corrosion in bay 5 in the sandbed region. AmerGen Presentation to ACRS (January 18, 2007) at slide 54. (thickness in bay 5 ranges from 1.185 inches in the upper sandbed region, 1.075 inches in the lower sandbed region, and 1.113 inches in the embedded region). The same slide shows that thickness in bay 17 is as low as 0.818 inches in the upper

sandbed and 0.986 inches in the lower sandbed. Id. Thus, from the results one would expect corrosion in bay 17 in the embedded region to be considerably worse than in bay 5.

In its Answer, Staff suggests that “Citizens do not address why measurements . . . in bay 5 . . . were not representative.” Staff Ans. at 14. In fact, Citizens stated that the exterior corrosion observed in bay 5 was the least of any bay. Petition at 6. Citizens have also provided more information on this issue in this pleading. Staff also fails to appreciate that the reason that the scope of the exterior measurements in the sandbed needs to be expanded is because there could be an undetected region of corrosion on the interior that compounds the acknowledged severe corrosion on the exterior. If, as AmerGen has claimed, the exterior corrosion is now under control, AmerGen’s current approach could miss the areas that are currently corroding at the highest rate from the interior. See Staff Ans. at 15. Thus, AmerGen’s approach of simply re-measuring at the same locations in 2008 and periodically thereafter is insufficient to provide reasonable assurance that the shell is not corroding to levels below the safety requirements.

In its Answer, AmerGen draws conclusions from the margin in bay 5 about the whole embedded region. AmerGen Ans. at 18. This is precisely what Citizens allege is not permissible. AmerGen apparently selected bay 5 for the embedded region measurement because it contained the most interior water and the bottom of the trench was closest to the embedded region, so that the least amount of excavation was required. AmerGen Ans. at 15. However, this approach failed to note that exterior corrosion had likely been occurring for longer in the presence of more oxygen and therefore could be more significant. Thus, while it might have been less convenient, a measurement in bay 17 would have proved far more about the conditions in the embedded region. The sandbed region is as close as 0.064 inches to the acceptance criteria that AmerGen is applying, Ex. ANC 2 at 6-16, Table 6. The results from the embedded region in bay 5 merely confirm that the worst bays in the embedded region could also be severely corroded in a similar pattern to those in the sandbed region.

Thus, rather ironically, AmerGen’s argument that the contentions raise no material disputes actually shows there are at least four detailed issues in dispute. More broadly, AmerGen believes that it has provided the required reasonable assurance that the drywell shell will not fall below safety

requirements if the plant operates beyond the current license period. In contrast, Citizens do not, because margins are already razor-thin or worse, corrosion rates are uncertain and could accelerate, corrosive conditions are already present on the interior of the shell, there may be undetected corrosion on the interior of the shell, and the measurements in the embedded region were taken in a bay where the least amount of exterior corrosion would be expected. The proposed new contentions raise questions about the extent of exterior monitoring for the sandbed and the extent and frequency of UT monitoring for the embedded region. This is relevant to licensing because, at best, the drywell shell is already close to failing safety requirements. If there is additional corrosion that has not yet been identified, that could show that the proposed drywell shell monitoring regime is not adequate to provide reasonable assurance that safety requirements would be met throughout any extended period of operation as required by 10 C.F.R. § 54.29. Thus, the issues raised by the contentions are highly material to the decision of whether to relicense the plant.

CONCLUSION

For the foregoing reasons, the ASLB should admit the proposed new contentions and grant Citizens a hearing on the issues raised.

Respectfully submitted



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Dated: January 23, 2007

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

In the Matter of)	
)	Docket No. 50-0219-LR
AMERGEN ENERGY COMPANY, LLC)	
)	ASLB No. 06-844-01-LR
(License Renewal for the Oyster Creek)	
Nuclear Generating Station))	January 23, 2007

CERTIFICATE OF SERVICE

I hereby certify that I caused the foregoing reply to the opposition to a motion for leave to add contentions to be sent this 23rd day of January, 2007 via email and U.S. Postal Service, as designated below, to each of the following:

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