

RAS 13038

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD

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Before Administrative Judges:

E. Roy Hawkens, Chairman
Dr. Paul B. Abramson
Dr. Anthony J. Baratta

In the Matter of

AMERGEN ENERGY COMPANY, LLC

(License Renewal for Oyster Creek Nuclear
Generating Station)

Docket No. 50-0219-LR

ASLBP No. 06-844-01-LR

February 9, 2007

MEMORANDUM AND ORDER

(Denying Citizens' Motion for Leave to Add Contentions
and Motion to Add Contention)

On December 20, 2006, the intervenors in this case – six organizations hereinafter referred to collectively as Citizens¹ – filed a motion seeking to add two new contentions challenging the License Renewal Application submitted by AmerGen Energy Company, LLC (“AmerGen”) for the Oyster Creek Nuclear Generating Station (“Oyster Creek”).² AmerGen and the NRC Staff oppose Citizens' Petition.³

¹ The six organizations are 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.

² See Motion for Leave to Add Contentions and Motion to Add Contentions (Dec. 20, 2006) [hereinafter Citizens' Petition]. Although Citizens labeled their filing as a motion, the parties – pursuant to the instructions in a prior Memorandum and Order (LBP-06-16, 63 NRC 737, 745 (2006)) – treated the filing in the nature of a petition, which extended the allowable time for AmerGen and the NRC Staff to answer, and allowed Citizens to file a reply (10 C.F.R. § 2.309(h)(1), (2)). See Citizens' Combined Reply to AmerGen's and the NRC Staff's Answer to Their Petition to Add New Contentions (Jan. 23, 2007) [hereinafter Citizens' Reply].

³ See AmerGen's Answer to Citizens' Motion for Leave to Add Contentions and Motion to Add Contentions (Jan. 16, 2007) [hereinafter AmerGen's Answer]; NRC Staff Reply to
(continued...)

For the reasons discussed below, we deny Citizens' Petition.

I. **BACKGROUND**

A comprehensive discussion of the background in this case may be found in prior decisions by this Board and need not be repeated here. See, e.g., LBP-06-7, 63 NRC 188 (2006). We will simply summarize the facts giving rise to the instant request by Citizens to add two new contentions challenging aspects of AmerGen's ultrasonic testing ("UT") monitoring program for the drywell shell.⁴

Citizens' newly proffered contentions are based on allegedly new and materially different information AmerGen recently disclosed as a result of activities that occurred during the October 2006 refueling outage at Oyster Creek. During that outage, AmerGen conducted extensive UT monitoring of the drywell shell that included numerous measurements in the previously excavated trenches in Bay 5 and Bay 17.

By way of background, in 1986, as part of an ongoing effort to investigate the impact of water on the outer drywell shell, the then-licensee excavated trenches in Bay 5 and Bay 17 to expose the interior drywell shell below the concrete floor – which is at a level of 10 feet 3 inches on the shell – to allow UT measurements to be taken to characterize the vertical extent of corrosion in the lower sand bed region of the shell (the lower level of the sand bed region is

³(...continued)

Citizens' Motion to Leave to Add Contentions and Motion to Add Contentions (Jan. 16, 2007) [hereinafter NRC Staff's Answer].

⁴ Pending before this Board is a single admitted contention submitted by Citizens challenging the adequacy of AmerGen's plan to perform UT monitoring in the sand bed region of the drywell shell (LBP-06-22, 64 NRC 229, 240-44 (2006)). The scheduling of the evidentiary hearing to adjudicate this contention will, consistent with Commission regulations, be keyed to the NRC Staff's issuance of the Final Safety Evaluation Report (FSER). See 10 C.F.R. Pt. 2, App. B, Model Milestones for Hearings Conducted Under 10 C.F.R. Part 2, Subpart L (providing, inter alia, that the evidentiary hearing will begin within 175 days of issuance of the FSER). Although the NRC Staff initially predicted that it would issue the FSER in December 2006, the Staff now advises that its issuance of the FSER will be delayed.

located on the shell at a level of about 8 feet 11 inches). See Citizens' Exh. ANC 1 at 11, 55, Enclosure to Letter from Michael Gallagher, AmerGen, to NRC (Dec. 3, 2006) (Supplement to License Renewal Application); Citizens' Exh. ANC 2 at 8-1, Letter from Michael Gallagher, AmerGen, to NRC (Dec. 8, 2006) (Information Package Submitted to Advisory Committee on Reactor Safeguards, Subcommittee on Plant License Renewal). The dimensions of the Bay 5 trench were about 18 inches wide and 18 inches deep, and those of the Bay 17 trench were about 18 inches wide and 12 inches deep (Citizens' Exh. ANC 1 at 55; Citizens' Exh. ANC 2 at 8-1). Numerous UT measurements were taken in these trenches in 1986 and 1988, after which the exposed drywell shell in the trenches was prepped and coated, and the trenches were filled with Dow Corning silicone foam covered with a protective layer of silicone elastomer to the height of the concrete floor to prevent the entry of water that might be present on the floor (Citizens' Exh. ANC 1 at 17, 55; Citizens' Exh. ANC 2 at 8-1).

During the 2006 refueling outage, AmerGen removed the filler material from both trenches so it could again take UT measurements there consistent with its license renewal commitments (Citizens' Exh. ANC 1 at 44). Upon removal of the material, AmerGen observed standing water in the Bay 5 trench and moisture in the Bay 17 trench, which AmerGen concluded was indicative that water was in contact with the interior drywell shell beneath the drywell floor (Citizens' Exh. ANC 1 at 18, 52; Citizens' Exh. ANC 2 at 8-2).⁵ After de-watering the Bay 5 trench, AmerGen deepened the trench an additional 6 inches to take UT measurements of the

⁵ The likely source of the water, concluded AmerGen, was a deteriorated connection in the bottom of the Sub-Pile Room drainage trough drainpipes, a void in the bottom of the Sub-Pile Room drainage trough, and condensation within the drywell (Citizens' Exh. ANC 1 at 18, 55, 63). AmerGen previously had considered water on the drywell floor to be a temporary outage condition and not an operating environment for the embedded shell (id. at 18). But AmerGen now assumes that "water in contact with the internal surface of the drywell shell and concrete at and below the floor elevation [to be] a normal operating environment" (id. at 21, 58).

shell in that newly exposed area, which until then had been embedded in concrete on both sides (Citizens' Exh. ANC 1 at 19; Citizens' Exh. ANC 2 at 8-3).

AmerGen took 294 UT measurements in the Bay 5 trench, including 42 measurements in the newly evacuated area of the trench. It took 290 measurements in the Bay 17 trench. See Citizens' Exh. ANC 1 at 56-57. The measurements revealed an average thickness of 1.113 inches that – when compared to the nominal wall thickness of 1.154 inches – indicated an average total wall loss of 0.041 inch since the shell was constructed nearly 40 years ago in 1969 (id. at 57-58). Based on its investigation and analysis, AmerGen determined that the majority of this wall loss occurred from the exterior of the shell between 1986 and 1992, when sand and water existed in the sand bed region located adjacent to the exterior of the drywell shell and significant corrosion of the external shell is known to have occurred (Citizens' Exh. ANC 2 at 8-2). AmerGen concluded that minimal corrosion has occurred since 1992, when the sand and water were removed from the sand bed region, and it does not expect continuing corrosion (id. at 7-4 to 7-7, 8-4). AmerGen represents that it nevertheless conservatively assumes that the embedded shell corroded during its entire life at a uniform rate of about 0.001 inch per year (i.e., $0.041 \text{ inch} \div 37 \text{ years}$), and that a similar rate of wall loss would occur between now and the end of extended operation (AmerGen's Answer at 18). This would leave a margin of 0.336 inch above the buckling failure criteria of 0.736 inch (Citizens' Exh. ANC 1 at 20, 57-58; Citizens' Exh. ANC 2 at 8-4).⁶

Notwithstanding its conclusion that the embedded portion of the drywell shell will maintain an adequate safety margin, AmerGen in December 2006 enhanced its drywell shell UT monitoring program for the period of extended operation by committing to take comparative

⁶ A thickness of 0.736 inch is argued to be the thickness below which buckling of the drywell shell becomes an issue (LBP-06-7, 63 NRC at 214-15).

measurements at the same locations in the trenches in Bay 5 and Bay 17 in 2008, and repeating these measurements at refueling outages during the period of extended operation until the trenches are restored to the original design configuration by filling with concrete or other suitable material (Citizens' Exh. ANC 1 at 21; Citizens' Exh. ANC 2 at 6-20).

Citizens – asserting that AmerGen's new monitoring program is flawed – request that the following new contentions be admitted to this proceeding (Citizens' Petition at 4-5):

1. The proposed UT monitoring program for the embedded region of the drywell shell is inadequate to ensure that safety margins will be maintained for any extended licensing period because the spatial scope of the monitoring is too restricted, a reasonable potential corrosion rate has not been developed, the proposed frequency of monitoring is not justified, and the monitoring could cease if AmerGen filled in the trench from which it proposes to do the monitoring.
2. The proposed UT monitoring program for the lower portion of the sand bed region from the outside of the shell is inadequate to ensure that safety margins will be maintained for any extended licensing period because it fails to provide systematic monitoring of potential corrosion occurring from the inside of the drywell shell in the sand bed region.

II. ANALYSIS

A. Legal Standards Governing The Admissibility Of Citizens' Newly Proffered Contentions

For Citizens to succeed in their quest to have their newly proffered contentions admitted, they must satisfy the regulatory requirements for establishing that each contention is timely. To this end, Citizens must show that (10 C.F.R. § 2.309(f)(2)(i)-(iii)):

- (i) The information upon which the . . . new contention is based was not previously available;
- (ii) The information upon which the . . . new contention is based is materially different than information previously available; and
- (iii) The . . . new contention has been submitted in a timely fashion based on the availability of the subsequent information.

Failure to satisfy any of these requirements will mandate the rejection of Citizens' contentions as nontimely.⁷

Additionally, to be admissible, Citizens' newly proffered contentions must satisfy the following standard admissibility requirements (10 C.F.R. § 2.309(f)(1)):

- (i) Provide a specific statement of the issue of law or fact to be raised or controverted;
- (ii) Provide a brief explanation of the basis for the contention;
- (iii) Demonstrate that the issue raised in the contention is within the scope of the proceeding;
- (iv) Demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding;
- (v) Provide a concise statement of the alleged facts or expert opinions which support the . . . petitioner's position on the issue and on which the petitioner intends to rely at hearing, together with references to the specific sources and documents on which the . . . petitioner intends to rely to support its position on the issue; and
- (vi) Provide sufficient information to show that a genuine dispute exists with the . . . licensee on a material issue of law or fact. This information must include references to specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief.

These admissibility requirements are "strict by design" (Dominion Nuclear Conn., Inc. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001)). A contention that fails to comply with any of these requirements will not be admitted for litigation (Private Fuel

⁷ As this Board previously explained (LBP-06-22, 64 NRC at 234 n.7), a nontimely contention is not perforce inadmissible. However, a petitioner must demonstrate that admission of a nontimely contention is warranted pursuant to the eight-factor balancing test in 10 C.F.R. § 2.309(c). Here, Citizens did not discuss the section 2.309(c)(1) balancing test in their petition, and their belated and spare discussion of that test in their Reply Brief (see, e.g., Citizens' Reply at 3) is inadequate to demonstrate that their contentions, if nontimely, warrant admission.

Storage, L.L.C. (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 325 (1999); Changes to Adjudicatory Process, 69 Fed. Reg. 2182, 2221 (Jan. 14, 2004)).

B. Citizens' Newly Proffered Contentions Are Not Admissible

1. Citizens' Newly Proffered Contention Challenging the UT Monitoring Program for the Embedded Region of the Drywell Shell is Not Admissible

Citizens contend that AmerGen's UT monitoring program for the embedded region of the drywell shell is inadequate to ensure safety margins will be maintained during the extended licensing period because (i) the spatial scope of the monitoring is too restricted, (ii) a reasonable corrosion rate has not been developed, (iii) the proposed frequency is not justified, and (iv) the monitoring could cease if AmerGen fills in the trench from which it proposes to do the monitoring (Citizens' Petition at 4).

AmerGen and the NRC Staff argue that Citizens' contention must be rejected because it is nontimely (10 C.F.R. § 2.309(f)(2)) and, alternatively, it fails to satisfy the admissibility requirements of 10 C.F.R. § 2.309(f)(1). See AmerGen's Answer at 7-20; NRC Staff's Answer at 10-14. We agree.

a. The First Newly Proffered Contention is Nontimely

At the outset, we observe that Citizens – in their February 7, 2006 Motion to Add or Supplement Contentions – attempted to introduce a contention that, like this one, challenged AmerGen's monitoring program for the embedded portion of the drywell shell (LBP-06-11, 63 NRC 391, 395 (2006)). In rejecting that contention, this Board observed that the NRC Staff's GALL Report, which was published in September 2005, "already address[ed] potential corrosion of inaccessible areas of the drywell [shell] that are 'embedded' in concrete" (id. at 398), and, thus, the allegedly new information underlying Citizens' proposed contention had long been in existence. We therefore concluded (id. at 397) that Citizens' newly proffered contention failed

to satisfy the timeliness requirements of 10 C.F.R. § 2.309(f)(2). The same rationale governs here and forecloses admittance of Citizens' newly proffered contention.⁸

Moreover, even if the Gall Report did not render this contention untimely, we find that the information that Citizens allege to be new and materially different does not satisfy the timeliness requirements of 10 C.F.R. § 2.309(f)(2). First, contrary to Citizens' understanding (Citizens' Petition at 2-3, 8-10), the fact that AmerGen has taken UT measurements in the newly excavated, embedded region in the Bay 5 trench and has committed to repeating these measurements in 2008 and periodically thereafter is not the kind of new information that will support admission of a new contention. As a matter of law and logic, if – as Citizens allege – AmerGen's enhanced monitoring program for the embedded region is inadequate, then AmerGen's unenhanced program in its License Renewal Application was a fortiori inadequate, and Citizens had an obligation to challenge it in their original Petition to Intervene. See LBP-06-22, 64 NRC at 246. This they failed to do, which constitutes an independent and alternative ground for rejecting their contention. See also ibid. (holding that, as a matter of policy, AmerGen's decision to improve its existing monitoring program to promote health and safety or to boost public support and confidence should not be viewed as conferring Citizens with an automatic opportunity to advance a new contention).⁹

⁸ As the NRC Staff correctly observes (NRC Staff's Answer at 11-12), the testing techniques contained in the December 2006 UT monitoring plan challenged by Citizens (e.g., the spatial scope and frequency of the monitoring) are not materially different from techniques in AmerGen's prior plans and cannot, of themselves, form the basis for a timely contention. See LBP-06-22, 64 NRC at 232-33 (discussing AmerGen's December 2005, April 2006, and June 2006 monitoring plans).

⁹ It should also be noted that Citizens have been aware of AmerGen's commitment to conduct visual and UT examinations in the trenches in Bays 5 and 17 since AmerGen docketed this commitment in April 2006. If Citizens wished to challenge the scope of AmerGen's program, it should have done so in its June 2006 Petition (see LBP-06-22, 64 NRC at 232 & n.4).

Additionally, we do not accept Citizens' assertion (Citizens' Petition at 3-4) that the existence of potential pathways for water to reach the exterior of the drywell shell in the embedded region constitutes new, materially different information for purposes of proffering a timely contention. Contrary to Citizens' intimation (id. at 3), the potential for water to reach the drywell shell from below due to the fact that "the bottom of the drywell is below the level of the groundwater table" is not new information. Citizens raised the issue of groundwater intrusion into the embedded region of the drywell shell in their October 2006 presentation to the Advisory Committee on Reactor Safeguards, thus demonstrating that this information was not new, not previously unavailable, and – significantly – not unknown to Citizens (AmerGen's Answer at 9). We note, moreover, that the drywell depth – which reportedly is 29.6 feet below mean sea level – has not changed since the reactor was constructed in the 1960s. See Citizens' Exh. ANC 2 at 7-4.

Nor does the "potential for water to come from above" (Citizens' Petition at 4) and reach the outside of the embedded portion of the drywell shell constitute new or previously unavailable information. This Board already has recognized a genuine issue of material fact in this case as to whether corrosion-causing moisture is entering the sand bed region from above. See LBP-06-7, 63 NRC at 218 (finding that Citizens had, for purposes of admitting its contention, adequately shown that "corrosion-causing moisture continues to enter the drywell [shell]" from above); accord id. at 218 n.29, 224; LBP-06-22, 64 NRC at 240-43. This information thus cannot form the basis for a new contention.

Finally, Citizens' assertion (Citizens' Petition at 4) that water from above could infiltrate into the exterior sand bed floor and come into contact with the embedded shell is simply a recycled version of an unsuccessful assertion Citizens made over a year ago. See Combined Reply of Petitioners at 14 (Dec. 19, 2005) (Citizens aver that AmerGen should conduct UT

monitoring of the drywell shell just below the sand bed floor, because it is possible that “there have long been crevices between the concrete and the outer surface of the drywell [shell] at the margins just below the sand bed region that would allow past, present and future water intrusion enough to afford a destructively corrosive environment”). Citizens present no new, materially different information that justifies considering their newly presented contention.¹⁰

b. The First Newly Proffered Contention Fails to Satisfy the Standard Admissibility Requirements

Even if Citizens’ newly proffered contention satisfied the timeliness requirements of 10 C.F.R. § 2.309(f)(2), we would nevertheless reject it as inadmissible pursuant to 10 C.F.R. § 2.309(f)(1)(v) and (vi), because Citizens have not alleged adequate facts or provided sufficient supporting arguments showing that a genuine dispute exists on a material issue of law or fact. See AmerGen’s Answer at 11-19; NRC Staff’s Answer at 13-15.

First, Citizens contend that the spatial scope of AmerGen’s UT monitoring program for the embedded portion of the shell is defective, asserting that AmerGen improperly chose to take UT measurements in the embedded region of the shell in Bay 5, even though measurements taken in 1992 show the shell in that region was not as corroded as in other Bays (Citizens’ Petition at 6). Citizens thus appear to be claiming that AmerGen was required to take UT measurements in a Bay where the shell was more highly corroded (ibid.).¹¹

¹⁰ Citizens also argue that AmerGen’s decision to assume the presence of water on the inside of the embedded shell at or below the interior floor level during normal operating conditions is new and materially different information that justifies its newly proffered contention (Citizens’ Petition at 3). Although AmerGen’s assumption is new, it is not materially different for purposes of supporting Citizens’ newly proffered contention unless Citizens adequately link the assumption to an alleged deficiency in AmerGen’s monitoring program. Citizens fail to establish this linkage, which also renders their challenge inadmissible pursuant to 10 C.F.R. § 2.309(f)(1). See infra Part II.B.1.b.

¹¹ The sand bed region is on the lower portion of the spherical base of the drywell shell, and it extends from about the 9-foot level to the 13-foot level of the shell (LBP-06-7, 63 (continued...))

This challenge is not admissible. At the most fundamental level, Citizens' argument ignores that a principal purpose of AmerGen's monitoring program was to obtain *visual* confirmation of whether corrosion was occurring on the interior, embedded region of the shell. See Citizens' Exh. ANC 1 at 18; see also id. at 44 (AmerGen's April 2006 commitment to perform visual examination of drywell shell in access trenches). Contrary to Citizens' assertion, the achievement of this goal does not require conducting UT measurements in any particular Bay. Rather, the achievement of this goal simply requires making visual observations in Bays where the possibility of corrosion is representative of other Bays. Citizens fail to provide any facts or arguments to suggest that the corrosive condition in the Bays chosen by AmerGen for the inspections (i.e., Bays 5 and 17) are not representative of the other Bays. Indeed, the record supports a contrary conclusion.¹²

Based on its visual inspection and UT measurements in Bays 5 and 17, AmerGen concluded that significant corrosion has *not* occurred, and will *not* occur, on any portion of the interior side of the embedded shell in the lower sand bed region, because the following corrosion-controlling factors exist in *all* the Bays (Citizens' Exh. ANC 2 at 8-3): (1) the concrete is alkaline, which increases the pH of new or existing water, thus inhibiting corrosion; (2) during operations, the drywell is inerted with nitrogen, thus inhibiting corrosion; (3) during outages,

¹¹(...continued)

NRC at 212). The "embedded region" is that region of the shell below the sand bed region that is encased in concrete on both sides. The term "embedded," however, refers to any part of the shell that is adjacent to concrete on one or both sides, which includes the "embedded region" and the interior of the shell up to the interior concrete curb. See AmerGen's Answer at 2 n.3 (citing Citizens' Exh. ANC 2 at 37).

¹² Citizens also assert that AmerGen ought to have deepened a trench other than the one in Bay 5 to take new measurements, because a different Bay may have revealed greater corrosion on the interior side of the embedded shell (Citizens' Petition at 6). But Citizens provide nothing more than mere speculation to support this assertion (Citizens' Reply at 9) ("there could be an undetected region of corrosion on the interior"), thus rendering it inadmissible.

exposure time to oxygen is very limited and the water pH is expected to be very high, which should render shell corrosion losses insignificant; and (4) repairs and modifications that were implemented during the 2006 outage will further minimize exposure to oxygen. Because Citizens fail to provide any credible facts or arguments that place AmerGen's conclusion in genuine dispute, their contention challenging the spatial scope of AmerGen's monitoring program is inadmissible (10 C.F.R § 2.309(f)(1)(v), (vi)).

Citizens also attack the frequency of AmerGen's monitoring plan for the embedded region, observing that AmerGen took a single set of "42 UT measurements in the newly exposed area" in the Bay 5 trench during the 2006 refueling outage, which showed that the "average thickness had decreased from a nominal 1.154 inches to 1.113 inches, a loss of 0.041 inch[]" (Citizens' Petition at 2). Citizens argue that the measurements taken in 2006 from that trench are "insufficient to establish a corrosion rate because there is no way of knowing over which time period the corrosion occurred" (*id.* at 6). This argument does not withstand scrutiny.

If, as Citizens assert (Citizens' Petition at 1, 6), the water in contact with the interior embedded shell resulted in significant corrosion, then the UT measurements taken in 2006 in the Bay 5 trench would have revealed significant shell thinning due to the apparent continuing presence of water. Yet these measurements showed a total of only 0.041 inch of total metal loss since plant construction in 1969. Assuming the correctness of Citizens' assertions (*id.* at 4) that (1) water has been in contact with the embedded shell since 1969, and (2) AmerGen's corrective actions in the sand bed region in 1992 failed to impede the rate of corrosion on the exterior portion of the embedded shell,¹³ then the metal loss of 0.041 inch would, as a matter of

¹³ But see Citizens' Exh. ANC 2 at 7-3 (AmerGen concludes essentially all of the metal loss on the exterior surface of the embedded shell in the sand bed region occurred *prior* to 1992, when (1) the sand, water, and corrosion byproducts were removed from the sand bed region, (2) the concrete floor in the sand bed region was covered with an epoxy coating, and (3) (continued...)

logic, be equally spread over the past 37 years, resulting in a corrosion rate of about 0.001 inch per year (see supra p. 4). As AmerGen explains (AmerGen's Answer at 18), an annual corrosion rate of 0.001 inch does not pose a threat to the structural integrity of the embedded drywell shell. See Citizens' Exh. ANC 1 at 20-21 (explaining that, using conservative assumptions, the embedded portion of the drywell shell will have a safety margin of 0.336 inch at the end of the period of extended operation); accord, e.g., Citizens' Exh. ANC 2 at 8-4.

The insufficiency of Citizens' challenge is further illustrated by the following calculations. Given that the average thickness measurement of the embedded portion of the sand bed region is 1.113 inch (supra p. 4), this still provides a margin of 0.377 inch before the 0.736 "general" acceptance criteria for buckling is exceeded (1.113 inch - 0.736 inch), and a margin of 0.623 inch before the 0.490 inch "local acceptance criteria" for buckling is surpassed (1.113 inch - 0.490 inch). See Citizens' Exh. ANC 2 at 6-8, 8-4. To reach the former level would require a corrosion rate of about 0.015 inch per year (or about 15 times the annual rate), and to reach the latter level would require a corrosion rate nearly 30 times the annual rate. Citizens have provided nothing that suggests the potential for – much less the existence of – such an extreme rate of corrosion in the embedded region.¹⁴

¹³(...continued)
caulk was applied to seal the joint between the exterior drywell shell and the concrete floor).

¹⁴ Citizens also attack AmerGen's monitoring program on the ground that it allegedly fails to comply with final Interim Staff Guidance ("ISG"), which indicates applicants for license renewal should "develop or establish a corrosion rate from past UT measurements or representative samples and then 'demonstrate that the shell will have sufficient wall thickness to perform its function through the period of extended operation'" (Citizens' Petition at 6) (quoting 71 Fed. Reg. 67,923 (Nov. 24, 2006)). Citizens argue that "AmerGen has only one set of measurements of corrosion in the embedded region from the trench in Bay 5[,] . . . [which] is insufficient to establish a corrosion rate" (Citizens' Petition at 6). Citizens' argument is unavailing as a matter of law, because the ISG on which Citizens rely is not binding (see, e.g., Curators of Univ. of Missouri, CLI-95-1, 41 NRC 71, 150 (1995)); rather, it constitutes mere guidance and lacks the force of law embodied in the regulations in 10 C.F.R. Part 54, "Require-
(continued...)

Citizens' expert, Dr. Hausler, opines that due to poor conditions in the concrete used in constructing Oyster Creek, low pH groundwater that is corrosively aggressive could come into contact with the exterior, embedded shell in the lower sand bed region (Citizens' Exh. ANC 4 at 6-7, Memorandum from Rudolf H. Hausler (Dec. 19, 2006)). This assertion is belied by the uncontradicted record evidence showing that design features serve to prevent groundwater contact with the exterior, embedded shell. In particular, the concrete floor is 10 feet thick and a waterproof membrane at the bottom extends up outside the walls (Citizens' Exh. ANC 2 at 7-4). Even if groundwater were able to migrate upward through this lengthy, sealed, and tortuous path, the basement of the Reactor Building contains sumps that collect and prevent any significant accumulation of water in the Torus Room (id. at 7-5).¹⁵

¹⁴(...continued)

ments for Renewal of Operating Licenses for Nuclear Power Plants.” AmerGen states that its program – consistent with the regulatory mandate in Part 54 – provides “reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the [current licensing basis]” (AmerGen’s Answer at 15, 16) (quoting 10 C.F.R. § 54.29). Citizens fail to raise a credible challenge to the adequacy of AmerGen’s program for the embedded region.

¹⁵ We note that Citizens’ Petition failed to develop Dr. Hausler’s opinion, and this failure provides an alternative ground for rejecting it. We also note that Citizens do not seriously dispute AmerGen’s conclusion that corrosion of the *exterior* embedded shell is bounded by the corrosion in the sand bed region and, accordingly, AmerGen’s plan to conduct UT monitoring in Bays 5 and 17, coupled with AmerGen’s UT monitoring program in the sand bed region – which includes periodic UT monitoring in the other Bays (Citizens’ Exh. ANC 1 at 47) – will provide reasonable assurance that adequate safety margins in the embedded portion of the sand bed region will be maintained. In this regard, AmerGen determined that (Citizens’ Exh. ANC 2 at 7-5 to 7-6): (1) a passive, protective film developed on the exterior embedded shell due to its contact with high pH concrete; and (2) the galvanic corrosion process resulted in preferential corrosion in the sand cushioned shell rather than the embedded shell. For these reasons, AmerGen concluded that the corrosion rate for the *exterior* embedded shell is less than that of the sand bed region of the shell, and direct monitoring of the shell in the sand bed region – which AmerGen will periodically perform during extended operation – will adequately bound any corrosion of the exterior embedded shell (id. at 7-7). Although Dr. Hausler asserts that there is “uncertainty” regarding the extent of corrosion on the exterior embedded shell (Citizens’ Exh. ANC 4 at 6), Citizens fail to develop that assertion and, in any event, fail to present evidence adequate to create a genuine factual dispute.

Citizens fail to raise a credible challenge to AmerGen's conclusion that the embedded portion of the drywell shell in the lower sand bed region will perform its intended function throughout the period of extended operation.¹⁶ AmerGen nevertheless has committed to perform at least one more round of UT measurements in that region in 2008 to confirm that any corrosion there is, indeed, "insignificant" (Citizens' Exh. ANC 1 at 14, 21). Citizens' challenge to AmerGen's monitoring program for that region fails to include adequate support and fails to show a genuine issue of material fact or law (10 C.F.R. § 2.309(f)(1)(v) and (vi)). We therefore decline to admit Citizens' challenge.

2. Citizens' Newly Proffered Contention Challenging the UT Monitoring Program for the Lower Portion of the Sand Bed Region is Not Admissible

Citizens assert that AmerGen's proposed UT monitoring program for the lower portion of the sand bed region – which includes measurements from outside the drywell shell at points visually identified as having exterior corrosion – "is inadequate to ensure that safety margins will be maintained for any extended licensing period, because it fails to provide systematic monitoring of potential corrosion occurring from the inside of the drywell shell in the sand bed region" (Citizens' Petition at 5). Because, according to Citizens, "interior corrosion would more likely occur as a 'bathtub ring' below the concrete curb," AmerGen "should systematically search areas that are most likely to be corroded from the interior using one foot square grids" (*id.* at 7).

AmerGen and the NRC Staff argue that Citizens' contention must be rejected because it is nontimely (10 C.F.R. § 2.309(f)(2)) and, alternatively, it fails to satisfy the admissibility

¹⁶ In light of our conclusion that Citizens fail to raise a credible challenge to AmerGen's determination that the embedded portion of the shell in the lower sand bed region will perform its intended function throughout the period of extended operation, we summarily reject Citizens' challenge to the aspect of AmerGen's program which provides that monitoring from the trenches will cease if AmerGen fills in the trenches from which it proposes to do the monitoring.

requirements of 10 C.F.R. § 2.309(f)(1). See AmerGen's Answer at 20-27; NRC Staff's Answer at 10-15. We agree.

a. The Second Newly Proffered Contention is Nontimely

Citizens argue that their second contention is timely because it is based on AmerGen's new finding that "interior corrosion is possible because of the wet conditions on the inside of the shell below the interior floor" (Citizens' Petition at 7). For the reasons discussed supra Part II.B.1.a, we find that the allegedly new and materially different information on which Citizens base their newly proffered contention fails to satisfy the timeliness requirements of 10 C.F.R. § 2.309(f)(2) and, therefore, cannot form the basis for a new contention.¹⁷

b. The Second Newly Proffered Contention Fails to Satisfy the Standard Admissibility Requirements

Even if we had found that Citizens' newly proffered contention satisfied the timeliness requirements of 10 C.F.R. § 2.309(f)(2), we would nevertheless reject it as inadmissible pursuant to 10 C.F.R. § 2.309(f)(1)(v) and (vi), because Citizens have not alleged adequate facts or provided sufficient supporting arguments showing that a genuine dispute exists on a material issue of law or fact.

Citizens assert that because "interior corrosion would more likely occur as a 'bathtub ring' below the concrete curb," AmerGen's UT program for monitoring interior corrosion "should first focus on scanning the shell in the region of the sand bed immediately below the interior floor," rather than using single measurement points "that were visually identified as having exterior corrosion" (Citizens' Petition at 7). In making their prediction that corrosion likely has formed in a "bathtub ring," Citizens rely on experience at other boiling water reactors where

¹⁷ In LBP-06-22, this Board rejected a similar contention submitted by Citizens, which argued that the "spatial scope" of AmerGen's UT monitoring program is too narrow (LBP-06-22, 64 NRC at 249). That same rationale (id. at 250-51) applies to Citizens' present contention.

corrosion “has been observed . . . at the junction of the bottom concrete floor and the steel shell” (Citizens’ Reply at 7-8).

Although Citizens may be correct regarding interior corrosion in drywell shells at other facilities, the instant record does not support a conclusion that Oyster Creek has experienced such corrosion. In response to an NRC Staff-issued Request for Additional Information, AmerGen stated that “visual inspections conducted in accordance with ASME Code Section XI, Subsection IWE, have not identified recordable corrosion at the junction of the bottom concrete floor and the steel shell or any other location inside the drywell,” and the “minor surface rust . . . noted in some areas . . . is limited to isolated areas and does not impact the intended function of the drywell” (Safety Evaluation Report Related to the License Renewal of Oyster Creek Generating Station at 4-73 (Dec. 2006 Update)); accord Citizens’ Exh. ANC 1 at 19 (“visual examination identified no recordable (significant) corrosion on the inner surface of shell”).

Citizens have presented no evidence of actual corrosion on the *interior* of the drywell shell at Oyster Creek, but merely assert that such corrosion is a “possibility” (Citizens’ Reply at 8). Cf. LBP-06-7, 63 NRC at 212-16 (discussing history of Oyster Creek corrosion on the *exterior* shell in the sand bed region). Citizens’ speculative assertion that interior corrosion *might* exist at Oyster Creek based on corrosion at other plants does not raise a genuine dispute of material fact and cannot provide the basis for an admissible contention. See Gulf States Utilities Co. (River Bend Station, Units 1 & 2), ALAB-444, 6 NRC 760, 773 (1977); 10 C.F.R. § 2.309(f)(1)(vi).¹⁸

¹⁸ AmerGen states that, contrary to Citizens’ assertion, a bathtub ring cannot form at this elevation – which AmerGen approximates at 12 feet – because (1) “any water behind the curb above 11’0” [would] drain out and not remain behind the upper part of the curb,” and (2) the curb was totally removed at the two trenches in 1986 and therefore water could not remain above the elevation 10’3” (AmerGen’s Answer at 24-25; see Citizens’ Exh. ANC 2 at 3-7). Citizens fail to demonstrate a genuine dispute of material fact regarding AmerGen’s conclusion.

Even if significant corrosion had been found on the interior of Oyster Creek's drywell shell – thereby forming a basis for this contention – Citizens provide no factual support for their assertion that AmerGen's proposal to use single point UT measurements will provide insufficient information to maintain safety margins. Citizens' only support is the NRC Staff's recommendation – set forth in its recent ISG – that licensees use "one foot square grids" when performing UT measurements (Citizens Petition at 7) (citing 71 Fed. Reg. at 67,925). But as discussed supra note 14, the ISG simply provides guidance. It is "not binding [on licensees] in a legal sense" and, accordingly, it cannot by itself serve as the only basis for Citizens' contention (Curators of Univ. of Missouri, CLI-95-1, 41 NRC at 150 & n.121).¹⁹

Finally, Citizens' argument that AmerGen ought to take the UT measurements from a particular side (exterior versus interior) of the drywell shell to determine whether the corrosion is on the shell's exterior or interior (see Citizens' Petition at 7; Citizens' Reply at 8) reveals a serious misunderstanding of the central purpose of the UT program, which is to measure the actual thickness of the shell to determine whether it will retain an adequate safety margin during the period of extended operation. Citizens have failed to explain why the location of corrosion on the shell's interior or exterior is material to the critical determination of whether the shell retains an adequate safety margin, nor have they proffered any support for the proposition that UT measurements would yield significantly different results if made from the inside versus the

¹⁹ Citizens fail, moreover, to respond to AmerGen's asserted justification for not utilizing one foot grids. See 71 Fed. Reg. at 67,925 ("one foot square grids shall be used, unless justified otherwise"). AmerGen explains that, even if the ISG were binding, it would have adequate justification for not using the one foot grids, because the grids can only be used "where the metal surface is essentially flat" (AmerGen's Answer at 26). Because of the historical corrosion at Oyster Creek, the exterior surface of the drywell shell is not flat, thus, the 106 points selected "are the only locations where UT measurements can be taken on the exterior shell between elevations 12'3" and 8'11"" (ibid.).

outside of the shell. Their assertion that UT measurements must be taken from a particular side of the shell thus raises no genuine issue of material fact.²⁰

Because Citizens present no other evidence to support their claim that AmerGen's selection of points for taking UT measurements in the lower portion of the sand bed region will inadequately maintain safety margins, Citizens' second newly proffered contention is rejected for failing to demonstrate a genuine dispute with AmerGen on a material issue of fact (10 C.F.R. § 2.309(f)(1)(v), (vi)).

²⁰ The cardinal concern expressed in all of Citizens' pleadings involves the ability of the Oyster Creek drywell shell to maintain its structural integrity during the period of extended operation. Here, Citizens have failed to posit, let alone support, a reason why the UT program for the lower sand bed region proposed by AmerGen would lead to inaccurate measurements of the shell thickness that would result in erroneous conclusions with regard to buckling.

III. CONCLUSION

For the foregoing reasons, we deny Citizens' request to add new contentions.

It is so ORDERED.

THE ATOMIC SAFETY
AND LICENSING BOARD²¹

/RA/

E. Roy Hawkens, Chairman
ADMINISTRATIVE JUDGE

/RA/

Dr. Paul B. Abramson*
ADMINISTRATIVE JUDGE

/RA/

Dr. Anthony J. Baratta
ADMINISTRATIVE JUDGE

Rockville, Maryland
February 9, 2007

* Judge Abramson's concurring opinion follows.

²¹ Copies of this Memorandum and Order were sent this date by Internet e-mail to counsel for: (1) AmerGen; (2) NIRS; (3) New Jersey; and (4) the NRC Staff.

Concurring Opinion of Judge Abramson

I concur with the majority opinion in its entirety, but feel it necessary to express in writing some material concerns I have regarding the degree to which it seems Citizens are able to contribute to the formation of a record in this proceeding and the failures by Citizens to thoughtfully articulate sound contentions.

In my view, from the outset of this case Citizens' contentions have failed to note (or discuss) critical factual matters necessary for the flaws they have alleged to be material to the impending buckling load failure they posit as their concern.

First, Citizens argued, without a single factual statement or argument that a corrosive environment continues to exist, that the drywell shell here is likely to undergo continuing corrosion and thereby erode to such a small thickness that this "inverted lightbulb" shaped steel vessel would fail by buckling. This failure was only later cured by Citizens after the Applicant submitted new information enabling Citizens to submit amended contentions.

Second, they failed (and have continued to fail) to provide a scintilla of factual or technical support from their own experts for their (therefore bare) proposition that the sort of localized corrosion which has been observed here can lead to buckling failure of this structure (which is essentially spherical in shape in the region of interest).

Now Citizens propound a contention which, at its heart, rests upon the precept that it matters, for the purpose of determining if this shell is approaching a buckling failure due to thinning, whether the corrosion occurs on the inside or the outside of this structure, and, impliedly therefore, not solely upon the remaining thickness of the shell which has been the sole focus of all arguments to date. As the majority ruling notes, nowhere do Citizens indicate that somehow the UT results would be affected by which side these UT measurements are taken from, nor do they indicate a belief that the 0.736 inch threshold for buckling might somehow be

different if corrosion is on one side or the other. This sort of speculative and unsupportive assertions do little to further the Agency's goal of assuring safety, for it simply fails to demonstrate any understanding whatsoever by Citizens of the technical matter they raise. That this seems to be the case is only enhanced by Citizens' current focus upon the embedded region of this liner – without a single mention of the structural effect which the embedding concrete might be expected to have upon the propensity of that portion of the liner to fail in buckling.

These unsupported arguments and failures to address facts obviously necessary to provide a foundation for a proposed contention add nothing to the process contemplated by our regulations, pursuant to which contention admissibility standards are strict by design so that a licensing board can adjudicate genuine disputes on material issues of fact or law.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
AMERGEN ENERGY COMPANY, LLC) Docket No. 50-219-LR
)
)
(Oyster Creek Nuclear Generating Station))

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing LB MEMORANDUM AND ORDER (DENYING CITIZENS' MOTION FOR LEAVE TO ADD CONTENTIONS AND MOTION TO ADD CONTENTION) have been served upon the following persons by U.S. mail, first class, or through NRC internal distribution.

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Dated at Rockville, Maryland
this 12th day of February 2007