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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
OFFICE OF THE SECRETARY

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

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

OYSTER CREEK NUCLEAR

GENERATING STATION

License Renewal for Oyster Creek Nuclear

Generating Station

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) Docket No. 50-219
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) November 1, 2007
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CITIZENS' ANSWER TO AMERGEN MOTION TO STRIKE

PRELIMINARY STATEMENT

Once again, American Energy Company LLC ("AmerGen") is seeking to exclude portions of a filing submitted on behalf of 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"). AmerGen's motion is yet another attempt to avoid the central issues in this litigation by excluding testimony that was carefully tailored to respond to the issues and guidance provided by the Atomic Safety and Licensing Board (the "Board"). By now, AmerGen should know that this Board has both technical and legal expertise and is perfectly capable of sifting and weighing scientific evidence.

Despite multiple motions in limine and motions to strike, this Board only excluded a tiny portion of the testimony presented by Citizens. Having failed to exclude evidence from the record, AmerGen is now trying to exclude arguments presented in Citizens' Proposed Findings of Fact. This effort is doomed because Citizens' Proposed Findings of Fact raised only one new argument, which was fully supported by the record. AmerGen's latest Motion to Strike should therefore be denied in its entirety.

TEMPLATE = SECY-037

SECY-02

ARGUMENT

AmerGen has apparently lost sight of the fact that this Board, as recently as August 9, 2007, has reminded the parties that “Licensing Boards are accustomed to weighing evidence, including expert testimony, and determining its relevance to the issues presented.” Memorandum and Order (Ruling on Motions in Limine and for Clarification) at 2 (Aug. 9, 2007). This statement applies even more strongly to statements of facts presented by legal representatives, because they are not as expert as the witnesses. Thus, even if AmerGen’s Motion had any merit, which it does not, it would be superfluous.

Throughout the Motion to Strike, AmerGen makes two separate arguments. First, AmerGen alleges that new arguments may not be presented in the findings of fact, because that would deprive it of an opportunity to respond to those arguments. Second, it alleges that certain elements in Citizens’ proposed findings were not based upon the record. AmerGen blends these two arguments into a mélange in an attempt to obscure their deficiencies. When taken separately, it is clear that the both arguments are erroneous. The first section shows that where Citizens’ proposed findings are based on record evidence, AmerGen cannot claim it was disadvantaged by the lack of opportunity to reply, which is not afforded to any party. Instead, AmerGen should have dealt with adverse evidence in its findings. Thus, the only issue that this Board needs to decide is whether Citizens’ proposed findings are based on the record. The second Section demonstrates conclusively that they are. Thus, AmerGen’s Motion To Strike is totally devoid of any merit.

I. AmerGen Has Deliberately Alleged The Wrong Legal Standard For New Arguments And Has Previously Ignored The Standard It Now Advocates

A. AmerGen Has Deliberately Alleged The Wrong Legal Standard For New Arguments

The cases cited in footnote 7 of AmerGen’s Motion to Strike reveal that AmerGen has deliberately mis-cited the law on the need to provide parties an opportunity to respond to new arguments. The *Texas Utilities* decision, which clarified *Union Electric Co. (Callaway Plant, Unit 1)*, upon which AmerGen relies, specifically stated “we do not interpret the *Callaway* case as barring new arguments in an intervenor’s proposed findings.” *Texas Utilities Generating Station (Comanche Peak Steam Electric*

Station, Units 1 and 2), LBP-84-10, 19 N.R.C. 509, 516 (1984). Instead, the *Texas Utilities* Board interpreted the *Callaway* case as barring new arguments based upon extra-record scientific material that could have been officially noticed. *Id.* at 517 accord *Kaczmarczyk v. I.N.S.*, 933 F.2d 588, 596 (7th Cir. 1991). Thus, the *Texas Utilities* Board found that where new arguments in intervenors' filings are based on record evidence, there is no prejudice because applicants have a clear obligation to address adverse evidence when filing proposed findings. *Id.* at 516-17.

Although the cases AmerGen cited explicitly make this critical distinction, AmerGen appears to have deliberately misconstrued these cases. The only allegation AmerGen makes about noticeable scientific material concerns a proposition that AmerGen acknowledges is also supported by record evidence. Motion to Strike at 4. Thus, AmerGen's arguments that new arguments are not permissible in final findings and it did not have a chance to reply are entirely erroneous and irrelevant.

B. AmerGen Added New Arguments To Its Proposed Findings

AmerGen itself provided new arguments in its proposed findings of fact, contradicting its argument in the Motion to Strike that new arguments are not permissible. Following the suggestion of one member of the Board that the margin close to the bottom of the sandbed region might be of particular interest, AmerGen added a new argument in its Proposed Findings of Fact that the smallest critical margin is 0.2 inches, not 0.064 inches as previously alleged. AmerGen's Proposed Findings of Fact at 48, 59. Although Citizens anticipated and refuted that argument, Citizens' Proposed Findings of Fact at 48-49, this conduct shows that AmerGen reasonably recognizes that parties may add new arguments to their proposed findings of fact and that the Board may draw reasonable scientific inferences from the record, even where those inferences had not previously been drawn by the parties.

II. The Record Fully Supports Citizens' Proposed Findings of Fact

It is difficult to comprehend why AmerGen believes this Board is incapable of determining which of the alleged facts in the various statements of proposed findings are incorrect. Because all of the arguments Citizens have presented are based on the record, the Board would be perfectly entitled to draw

precisely the same conclusions as Citizens from the record.¹ Although new arguments based on the record are permissible, Citizens provided only one new argument, which they applied to two situations. The new argument was that Monte Carlo simulation could be a useful tool to assess the uncertainty in factors where no assessment of uncertainty has been possible to date. In particular, Citizens suggested that Monte Carlo simulation could be used to assess the uncertainty of the extent of areas below certain thresholds (such as 0.736 inches) and the uncertainty in the factor of safety to be derived from a new finite element model.² All the other allegedly new arguments are actually continuations of long-running disputes about bias in the external measurements, compliance with the very local acceptance criterion, the extent of Dr. Hausler's expertise, and the degree to which the epoxy coating will protect the drywell shell in the future. The argument about the potential use of Monte Carlo simulation is a permissible new argument because there is plenty of evidence on the record about both the use of Monte Carlo simulations and the need to take full account of the uncertainty about the current state of the drywell shell.

A. The Record Fully Supports Table 1

AmerGen argues that Table 1 presented in Citizens' Proposed Findings of Fact is somehow an impermissible use of the evidence on the record. Motion to Strike at 3. In fact, as the notes below Table 1 make clear, it is a compilation of results that are on the record. Although AmerGen complains that it has had no chance to respond to Table 1, the issue that Table 1 is designed to address, i.e. whether the external results exhibit a significant bias, has been repeatedly discussed by the parties. *E.g.* Citizens' Proposed Findings of Fact and Conclusions of Law at 86-87. In addition, Table 1 uses the approach suggested at the hearing by AmerGen's own statistical expert. *Id.* at 18. Moreover, the Board has stated that it intends to determine "how much the actual values of thickness can reasonably be expected to differ from the measured values. . . ." Board Order at 7 n.10 (June 19, 2007), and ordered AmerGen to provide a

¹ *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-229, 8 AEC 425, 437, *rev. on other gnds.*, CLI-74-40, 8 AEC 809 (1974); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 & 2), ALAB-422, 6 NRC 33, 66 (1977)..

² AmerGen has not moved to strike the second application of this argument. Citizens' Proposed Findings of Fact and Conclusions of Law at 80.

table with the mean thickness and the 95% confidence interval for all of the data taken. Board Order at 11 Question 9 (August 9, 2007). Thus, AmerGen's complaints that it could not anticipate that Citizens would compile the data in this way ring hollow. Motion to Strike at 3. Indeed, the main issue is why AmerGen did not fully respond to the Board's August 9th Order³ and instead allowed its witnesses to speculate about the degree of bias in the external measurements instead of carrying out the simple comparison suggested by the Board and its own statistical expert.

In this proceeding AmerGen has consistently tried to rely on speculative qualitative arguments and has consistently tried, but failed, to exclude hard statistical evidence presented by Citizens. The Motion to Strike is merely the latest attempt by AmerGen to try to wish away hard numerical evidence so that the Board would be forced to weigh qualitative arguments rather than scientific facts. This attempt is entirely misguided because, as it has repeatedly made plain, this Board is well qualified to sift the scientific evidence in the record. In presenting Table 1 Citizens have assisted the Board to easily compare results that were provided in a number of different exhibits and find that the numerical data show that AmerGen's qualitative arguments about bias in the external measurements are either vastly overblown or erroneous. Far from being objectionable, this is precisely what post-hearing proposed findings of fact are supposed to do.

To show that Table 1 is fully supported by the record, Citizens here reiterate how it was compiled column by column. This information was provided in a more succinct form in the Notes under Table 1. Citizens' Proposed Findings of Fact and Conclusions of Law at 20. The first column is taken directly from AmerGen Ex. 16, Table 1, Page 1. The second column is slightly more complex. Because AmerGen failed to fully comply with this Board's August 9th Order, Citizens were forced to calculate the standard deviation of the external measurements and the lower 95% confidence limit from the final data set using the methods described in detail by AmerGen's experts. AmerGen Ex. C Part 3 A4, A8-17. This

³ The Order required AmerGen to calculate the mean and the 95% confidence interval for all of the data provided in AmerGen Ex. 20, which included the external data. AmerGen Ex. 20 at 48. Instead, AmerGen only provided a partial response that did not include the mean and 95% confidence interval for the external data. AmerGen Ex. 25.

is a simple calculation that is taught in high school statistics. Because this Board is a technical, as well as a legal panel, Citizens are confident it has the capability to review these simple statistical calculations for accuracy.

Should the Board decide that it is incapable of checking these calculations, Dr. Hausler has previously produced estimates of the standard deviation and the lower 95% confidence intervals of the mean of the external measurements in Bays 1, 13, 15, and 19. Citizens' Exhibit 12 at 13, 17; Citizens Ex. 38 at 11. The results from these estimates differ slightly from the final analysis, because of discrepancies between various reports of what the results actually were, but they confirm the critical issue; that the lower 95% confidence limit of the average of the external measurements in certain Bays is at or below the acceptance criterion for that average. Citizens' Ex. 12 at 7; Citizens Ex. 38 at 11.

The third column is merely a subtraction of columns one and two, to which even AmerGen does not object. Motion to Strike at 3. The fourth column is taken from Citizens' Ex. 45 at 5 above 11 feet column, except that Citizens placed stars in those columns where the internal grid data in a Bay was acknowledged by AmerGen not to be representative of the thickness of that Bay. The fifth column was estimated from confidence intervals provided in AmerGen Ex. 25. Where only one grid was used in Citizens' Ex. 45, the lower 95% confidence limit was taken directly from AmerGen Ex. 25. Where two grids were used the estimate of the thickness, the confidence interval derived from AmerGen Ex. 25 by subtracting the lower 95% confidence interval from the mean and dividing by the square root of 2, because the number of points in the mean doubled and the standard deviation of the mean reduces by the square root of the number of points used for the estimate of the mean. Citizens' Ex. 38 at 6. The sixth column is a simple subtraction. The seventh column subtracts 0.01 inches to allow for systematic error, which is justified by systematic error identified in 1996, and possibly 1994. Citizens' Proposed Findings of Fact and Conclusions of Law at 8-9. Finally, the last two columns are taken directly from AmerGen Exhibits.

In short, the numbers provided in Table 1 are either taken directly from AmerGen documents or are derived from such documents using simple statistical calculations. This Board is therefore amply

qualified to decide how much weight to give to Table 1. While AmerGen may not like Table 1 because it shows that the external measurements have little to no bias, AmerGen's Motion To Strike only highlights that AmerGen failed to provide a comparative statistical analysis of the various data sets. At this stage AmerGen cannot complain that Citizens expended much effort to provide the Board with proposed findings of fact that are based on rigorous quantitative analysis of all the UT data in the record, whereas AmerGen relied upon selective and speculative qualitative arguments.

B. Reference To Academic Papers Is Permissible

The weakness of AmerGen's Motion to Strike is even more obvious when it tries to argue that Citizens were not permitted to reference a scientific paper placed in the record by AmerGen to support the proposition that Dr. Hausler used a standard statistical approach to calculating extreme value statistics. Motion to Strike at 4-5. Despite its claims to the contrary, AmerGen obviously had ample opportunity to examine its own exhibit. In addition, it was given an opportunity to comment on Dr. Hausler's methodology at the hearing, but AmerGen said that it had "no testimony to provide in response." Hearing Tr. at 551:19-20.

Finally, AmerGen objects to a reference to a scientific paper that was not in the record. This objection is unfounded because a combined legal and technical panel may take notice of publications in peer reviewed journals, which, by definition, are accepted by the scientific community and are reliable. *Union Electric Co. (Callaway Plant, Unit 1)*, ALAB-740, 18 N.R.C. 343, 349 (1983); *see also* 10 C.F.R. § 2.319(d) ("In proceedings under this part, strict rules of evidence do not apply to written submissions."); 10 C.F.R. § 2.337(f) ("the presiding officer may take official notice of . . . any technical or scientific fact within the knowledge of the Commission as an expert body."); *Kaczmarczyk v. I.N.S.*, 933 F.2d 588, 596 (7th Cir. 1991) (courts allow agencies . . . wide latitude in taking official notice);.

C. Citizens Based Their Argument About Monte Carlo Simulations On The Record

The record shows that AmerGen has used Monte Carlo simulations to test how large the corrosion rate could have been without being detected. AmerGen Ex. 20 at 27, 52-53. As described by

AmerGen, a Monte Carlo simulation involves generating a simulated set of inputs to a model from a set of assigned probability distributions. *Id.* at 27. The model is then run repeatedly to determine what effect the random variation has on the output of the model. *Id.*

Citizens have merely suggested that this approach could be used in conjunction with the contour plotting to determine the effect of both the uncertainty in the thickness of the vessel and other input parameters on estimates of the extent of the area below 0.736 inches, the factor of safety, or other acceptance criteria. Citizens' Proposed Findings of Fact and Conclusions of Law at 32, 80. As shown above, although this is a new argument, it is permissible because it is based upon facts that are in the record.

Apparently AmerGen mistakes this straightforward inference from the record as new evidence, forgetting that the record already contains a full explanation of how Monte Carlo simulations can be applied to define uncertainty and much discussion of the need to take account of uncertainty when assessing compliance with the Current Licensing Basis ("CLB") and other acceptance criteria. The law is clear that because AmerGen had a similar chance to make this connection,⁴ this argument must be weighed by the Board. Moreover, because this Board is well qualified to review such arguments, and indeed, could have generated the conclusion itself, AmerGen will experience no prejudice from its failure to anticipate the argument.

D. Certain Statements Regarding Dr. Hausler's Qualifications Were Unsupported

As AmerGen correctly surmises, Citizens were working from a different version of Dr. Hausler's CV than was submitted on the record. Thus, although all the statements offered regarding Dr. Hausler's qualification and training are correct, not all are supported by reference to Citizens' Ex. D. However, AmerGen is incorrect when it alleges that the record does not support the proposition that Dr. Hausler's educational background is broader than a degree in chemical engineering. Motion to Strike at 6. In fact, Citizens' Ex. D Attachment 1 at 1 refers to the "broadly conceived curriculum at the Swiss Federal

⁴ In fact, AmerGen had a better opportunity to make this argument because it has far more resources than Citizens to expend on legal and scientific professionals.

Institute of Technology” as being designed to prepare corrosion engineers in over 30 distinctly separate sciences.

Citizens acknowledge that the statements about the four Nobel Prize winners under whom Dr. Hausler studied are not supported by Citizens’ Ex. D. Citizens leave it to the Board to treat these statements with appropriate weight and note that they were not provided as part of Citizens Proposed Findings Of Fact.

E. Citizens’ Expert Previously Raised The Argument About The Lower Sandbed Epoxy Coating

Finally, AmerGen complains that it did not have any notice of the argument that the lower sand bed region was protected only by the epoxy floor. Thus is entirely incorrect. In fact, precisely this argument occurs at Citizens Ex. B, Attachment 5 at 16. Therefore, this argument was raised by Dr. Hausler in the initial filing. AmerGen cannot now make up for its failure to respond to this argument by offering precisely what it claims Citizens should not; a lawyer’s interpretation of a photograph when an expert interpretation is required.

III. All Findings Relate To Issues That Are In The Scope Of The Proceeding

It is difficult to understand why AmerGen thinks this Board needs its assistance in determining the scope of the hearing. In addition, the two arguments raised are flimsy and, indeed, the first is inconsequential. Citizens did not suggest that this Board should find real-time monitoring appropriate, they merely accurately stated that New Jersey’s expert had suggested that real time monitoring should be considered. Citizens’ Proposed Findings of Fact and Conclusions of Law at 46. Citizens trust that the Board is perfectly capable of distinguishing a suggested finding from a background fact.

On the second point, Citizens are not seeking to challenge the CLB, although Citizens note that there is an ongoing dispute about what exactly is and is not included within the CLB. Instead, Citizens are seeking to address the degree of conservatism that has been included in calculations of the factors of safety in the past, and may be included in the future, by pointing out that there is disagreement about

whether the capacity reduction factor employed in the past, and to be applied in the future, is actually sufficiently conservative. Citizens' Proposed Findings of Fact at 60, 80.

Illustrating that this issue is within the scope of the proceeding, the Board asked a general question about conservatism in the structural modeling in questions prior to rebuttal testimony, Board Order at 12 Question 12(c) (August 9, 2007), and then specifically asked AmerGen's witness about the capacity reduction factor at the hearing, *e.g.* Hearing Tr. 165:11-22. Immediately thereafter, Citizens' counsel made the same point that Citizens repeated in their proposed findings. *Id.* at 166:2-6. Thus, it is crystal clear that this issue is within the scope of the hearing.

Moreover, it would be fundamentally unfair to allow AmerGen an opportunity to expound on the reasons that the models it has used, and proposes to use in the future, are conservative, while simultaneously depriving Citizens of the ability to respond to those statements. *See* Motion to Strike at Note 7 (parties must have an effective chance to respond to crucial facts). Thus, Citizens' argument that the models used to date, and that will be used in the future, are not conservative for a number of reasons, including the double counting of hoop stress, is clearly within the scope of the proceeding.

CONCLUSION

For the foregoing reasons, AmerGen's Motion To Strike should be denied in its entirety.

Respectfully submitted,



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Dated: November 1, 2007

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges

E. Roy Hawken

Dr. Paul B. Abramson

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In the Matter of

AMERGEN ENERGY COMPANY, LLC

(License Renewal for the Oyster Creek
Nuclear Generating Station)

)
) Docket No. 50-0219-LR

)
) ASLB No. 06-844-01-LR

)
) November 1, 2007
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CERTIFICATE OF SERVICE

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

I hereby certify that on November 1, 2007, I caused Citizens' Answer to AmerGen's Motion to Strike and Citizens' Motion to Strike AmerGen's unauthorized response to be served via email and U.S. Postal Service (as indicated) on the following:

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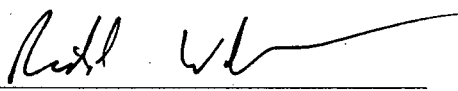
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Dated: November 1, 2007