RAS 13964

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	)	
	)	Docket No. 50-219
AMERGEN ENERGY COMPANY, LLC	)	
OYSTER CREEK NUCLEAR	)	
GENERATING STATION	)	
	)	August 1, 2007
License Renewal for Oyster Creek Nuclear	)	
Generating Station	)	
	)	

CITIZENS' OPPOSITION TO AMERGEN AND NRC MOTIONS IN LIMINE

PRELIMINARY STATEMENT

American Energy Company LLC ("AmerGen") and NRC Staff have moved to exclude certain testimony and statements provided in support of the Initial Statement of Position 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 little more than an attempt to avoid the central issues in this litigation by excluding testimony that was carefully tailored to respond to the framework provided by the Atomic Safety and Licensing Board (the "Board"). NRC Staff's motion similarly attempts to exclude testimony that was properly presented and is relevant to the contention. Finally, both parties make unjustified attacks on the scope of Dr. Hausler's expertise.

TEMPLATE = SECY-041

SECY-02

ARGUMENT

I. Evidence Concerning Estimates of Current Margin Is Admissible

A. The Board Has Invited Litigation About The Existing Margin

AmerGen and NRC Staff are seeking to exclude much testimony about the existing margin available to AmerGen. However, the Board has consistently found that the existing margin must be addressed as part of the contention. For example, when it first admitted the contention the Board stated that the existing margin "may ultimately be a topic for summary disposition" after the record became sufficient to show whether the corrosion was in large areas or isolated small patches.[1] LBP-06-22 (slip. op. at 17 n. 16). This language also confirms that the Board was fully aware at the outset that the spatial distribution of the severely corroded areas would affect margin and anticipated litigation on that specific topic as well as on available margin in general.[2]

More recently, in denying AmerGen's Motion for Summary Disposition, the Board stated that the litigable issues in this proceeding are the existing margin, the potential for existence of a corrosive environment; and the estimated corrosion rate. Board Order dated June 19, 2007 at 7. The Board recognized that the margin had to take account of the uncertainties in the measurements, stating that "in addressing uncertainties, the parties may provide evidence associated with the measurement technique as well as with the interpretation of the data. The Board's consideration of this information will be for the purpose of determining how much the actual values of thickness can reasonably be expected to differ from the measured values. . . " June 19 Order at 7 n.10. Thereafter on Page 8 the Board stated:

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[1] This issue is now at the heart of the dispute raised by the contention.

[2] In this Motion Citizens will use the term "severely corroded" to refer to areas of the drywell shell that are thinner than 0.736 inches.

> Similarly, although Citizens may not challenge the derivation or validity of the **established** acceptance criteria or the methodology for analyzing UT results, **they are not precluded from arguing that AmerGen's application of acceptance criteria and analytic methodology to the 2006 UT results was inconsistent with past practice.** See Citizens' Answer at 5-8, 10. Such a challenge, if advanced by Citizens, would not be an attack on the validity of AmerGen's *established* acceptance criteria and methodology for analyzing UT results. Rather, it would be an assertion that AmerGen's *unexplained deviation* from established, valid practices casts doubt on the most recent analysis.

Id. at 8 (bold emphasis added). Furthermore in the same Order, the Board stated that it expected parties to address whether the "extant pattern of corrosion" could result in susceptibility to buckling failure either now or in the future. *Id.* at 9 n. 11. Thus, even though the Board found that Citizens are precluded from raising challenges regarding "(1) the derivation of the acceptance criteria for the drywell shell (2) the established methods for analyzing UT results; and (3) the scope of the UT monitoring program," *id.* at 5, it did not exclude litigation on many issues, including which of the many inconsistent acceptance criteria and statistical methods employed were established, the uncertainty in the results, and whether the pattern of corrosion on the drywell shell could render it susceptible to buckling.

Further clarifying the scope of the hearing, the Board recently ruled that to satisfy its burden of showing that the proposed UT monitoring regime will maintain safety margins, "AmerGen must prove that its *established* technique for analyzing the UT data and calculating the rate of corrosion . . . utilizes inputs that are sufficiently accurate when account is taken of associated uncertainties and corresponding variances." Board Order dated July 11, 2007 at 3. Furthermore, the Board indicated that it expected AmerGen to show with a 95% confidence level that the drywell shell will not violate the minimum thickness requirements in the interval between UT inspections based on AmerGen's estimates of the mean and the variance. *Id.* at 4. In response to a question from NRC Staff, the Board stated it would normally regard the methodology relied upon by the NRC Staff, as described in the

SER, to be the established valid practice. *Id.* at 3 n. 4. Finally, the Board stated that even where AmerGen establishes a valid statistical technique, Citizens may still demonstrate that AmerGen was inconsistent in a number of ways, including selecting inputs, applying the selected uncertainties to the measurements, or using the derived variances when calculating the margin. *Id.* at 4.

B. Evidence Regarding Acceptance Criteria Is Admissible

AmerGen once again mistakenly alleges that the Board's decisions have precluded any litigation about the acceptance criteria. AmerGen Motion in Limine at 6-7. In fact, the Board has made it clear that AmerGen bears the burden of proving which of the applied acceptance criteria are actually the established valid criteria. The Board has also decided that Citizens may point out inconsistencies even in AmerGen's established practices. Citizens Initial Statement shows that AmerGen was inconsistent in the way it stated and applied the local area acceptance criterion. Citizens alleged that AmerGen's concerns about the validity of past practice was partly responsible for the inconsistencies and suggested which of the applied criteria represented the established practice. In contrast, AmerGen alleged the inconsistencies were not important because certain calculations were more conservative than necessary and suggested that the least conservative acceptance criterion was the established practice. These disputes of fact are clearly within the scope of this proceeding and must be addressed through the hearing, not by excluding evidence put forward by Citizens.

On a related issue, NRC Staff assert that Citizens are forbidden from arguing that the local acceptance criteria are only established and valid for square areas of severe corrosion. NRC Staff Motion in Limine at 5, 6. However, the Board has made it clear that AmerGen must prove it has established valid practices in order to preclude litigation on this point. AmerGen has not established valid acceptance criteria for areas that are not square. In fact, Citizens have shown that the NRC Staff approved the application based upon AmerGen's

unjustified assertion that that the total area of the drywell thinner than 0.736 inches was 0.68 square feet. SER at 4-58. Thus, the issue of the shape of the severely corroded areas was not addressed by the SER, because NRC Staff apparently believed that the severely corroded areas were all bounded by a one foot by one foot square. It is therefore appropriate for Citizens to present evidence showing that there is no established valid practice regarding acceptance of areas of severe corrosion that are not square and are larger than one foot by one foot square.

C. Citizens Are Permitted To Point Out Flaws In AmerGen's Analysis Of The Existing Margins

AmerGen has sought to exclude much of Citizens' evidence, including contour plots of the existing pattern of corrosion on the drywell shell, graphs plotting the measured UT data, and various ways of estimating the existing margin, on the grounds that Citizens are challenging AmerGen's statistical analysis methods. AmerGen Motion in Limine at 5. AmerGen appears to forget that before it can make such a claim, it has the burden of proving which methods it has established. So far, AmerGen has failed to present any testimony that directly addresses this issue. Furthermore, even after AmerGen shows that various statistical methods are established, Citizens are still able to identify and challenge inconsistencies in the application of the method or allege that the inputs are not sufficiently accurate. Moreover, the Board has specifically invited litigation on the issue of whether the extant areas of severe corrosion render the drywell shell susceptible to buckling.

Citizens Initial Statement pointed out many problems with AmerGen's analysis of the existing margin, including the failure to properly screen the 2006 external results against all of the acceptance criteria, the failure to account for the uncertainty in the mean thicknesses and the extent of the severely corroded areas, and the use of a correction technique that obscured the results of the external UT measurements. AmerGen attempts to exclude most of

these issues by alleging that it only uses the results from the internal grids to assess margin. AmerGen Motion in Limine at 5. This argument cannot prevail because past practice has been inconsistent; in fact, external UT data have been used to estimate margins, *e.g.* AmerGen Ex. 17 at 7. In addition, AmerGen has recently compared the mean of the external data with 0.736 inches, the established acceptance criterion. AmerGen Ex. 16 at 5.

Furthermore, while Citizens acknowledge that one established statistical method for deriving margin is to compare the lower 95 percentile confidence limit of the means of the interior grids with the acceptance criterion for mean thickness, Citizens are expressly permitted to argue that AmerGen has been inconsistent in its selection of inputs or that the inputs are not sufficiently accurate. Thus, litigation about whether the exterior UT data should also be used as an input to AmerGen's standard statistical method for finding margin above the acceptance criterion for mean thickness has already been authorized by the Board as within the scope of the proceeding. In addition, AmerGen has vividly illustrated that the internal data alone are not sufficiently accurate to estimate margin. AmerGen has estimated that the margin for the average thickness in Bay 1 is 0.365 inches based on the internal data, AmerGen Ex. 3 at Figure 1, while the former reactor operator estimated the same margin to be 0.064 inches using the external data. AmerGen Ex. 17 at 7, Appendix B.

Moreover, Citizens also presented the contour plots in direct response to the Board's expectation that the parties would present evidence on the whether the pattern of corrosion on the drywell shell could make it susceptible to buckling now or in the future. This is necessary to insure that the shell will meet the current licensing basis ("CLB") during any extended period of operation. The CLB requires AmerGen to define the extent of severely corroded areas. *See* Letter from Dromerick to Barton, dated April 24, 1992 and Letter from DeVine to NRC, dated May 26, 1992 *available at* ML063470557 (NRC required reactor operator to "confirm that . . . the corroded areas are localized" and the reactor operator

responded by committing to take the external measurements). Thus, to meet the CLB during any period of extended operation, AmerGen must at least use the external UT results to show whether the areas of severe corrosion are localized and predict how those areas would change if thickness decreased. AmerGen's latest approach to this task, presented in Revision 2 of the 24 Calculation, cannot represent an established valid method because the document was not available when the SER was published, it fails to predict how the severely corroded area would change if the shell got thinner, and previous versions of the report did not contain a systematic approach to this problem. Thus, Citizens' evidence on the extent of the severely corroded areas and the uncertainty in the calculation of those areas was explicitly authorized by the Board.

D. Citizens Presented No Evidence Disputing The Scope Of UT Monitoring

AmerGen and NRC Staff misinterpret the purpose of presenting the contour plots and other data analyses. These analyses are not designed to illustrate that more UT measurement points are needed. Instead, they illustrate that all the UT results must be used for the purpose of estimating margins. The analyses further show that the spatial scope is related to the uncertainty in the parameters that must be calculated for comparison with the acceptance criteria, e.g. the extent of the severely corroded areas, the average thickness of the shell in each Bay, and the average thickness of the thinnest square foot of the shell. Thus, the objections are misguided.

E. Uncertain Estimates Of The Extent Of Severely Corroded Areas Must Be Admitted

AmerGen complains that Citizens cannot estimate the extent of the severely corroded areas with any accuracy. AmerGen Motion in Limine at 8. This is precisely the point. At minimum, in this litigation AmerGen faces the task of showing that there is 95% certainty that the largest severely corroded area is smaller than nine square feet. Citizens' estimates

and plots are designed to show that it is impossible for AmerGen to provide such evidence and to present the best possible estimates of the extent of severely corroded areas. AmerGen's assessments of the extent of severely corroded areas are more uncertain because they arbitrarily assume such areas are square and the areas for evaluation are not selected systematically. *E.g.* Ex. 13 at 5. Thus, if Citizens' estimates of the extent of severely corroded areas are too speculative, so too are AmerGen's. Ironically, excluding all testimony about the extent of the severely corroded areas on the grounds that the estimates are too uncertain would leave AmerGen with no possibility of showing that the severely corroded areas are localized. This would preclude relicensing because AmerGen must make such a showing to demonstrate that it can maintain the CLB during any extended period of operation.

II. Dr. Hausler Is Suitably Qualified

AmerGen suggests that Dr. Hausler, Citizens' expert, is not sufficiently qualified on the subjects of statistical analysis and coating failure. AmerGen Motion in Limine at 3-5. NRC Staff also suggest Dr. Hausler is not qualified to opine on coatings. NRC Staff Motion in Limine at 6. In fact, Dr. Hausler has extensive experience in both statistical analysis and coating failure. Dr Hausler's resume shows that he carried out statistical analysis of North Slope corrosion data for ARCO. Attachment 1 to this Motion provides further details of his extensive experience with statistical analysis of corrosion. The attachment also shows that Dr. Hausler has had extensive experience analyzing the failure of epoxy coatings.

NRC Staff also question whether Dr. Hausler may opine on whether the acceptance criteria are adequate for groove shaped areas. NRC Staff Motion in Limine at 6. Citizens recognize that Dr. Hausler is not a structural engineer, but there is no dispute that the acceptance criteria were developed by modeling square areas of severe corrosion.

Dr. Hausler's work has shown that groove-shaped areas of such corrosion are probably present in Bays 1, 15 and 19. Thus, he may comment on the mismatch between the shapes.

Finally, NRC Staff suggest that Dr. Hausler's opinions on coating life and visual inspections are speculative. *Id.* This is obviously incorrect because these opinions are supported by admissions by AmerGen experts and employees. Testimony of Dr. Hausler, Attachment 5 at 17.

III. Evidence On Interior Corrosion Is Admissible

AmerGen argues that the Board has previously ruled out the possibility of interior corrosion. AmerGen Motion in Limine at 6. This is not correct. Although the Board did not consider the material presented in support of a rejected contention to be sufficient to establish that significant interior corrosion is possible, considerable new evidence on this point has since become available. Citizens have presented some of this new evidence in Exhibits 26, 27, and 36, and have quoted Dr. Shack, a member of the ACRS, on this issue. Furthermore, the significance of the interior corrosion rate, estimated by Dr. Shack to be around 0.002 inches per year, simply cannot be evaluated until the margins and the exterior corrosion rate are established. Because the Board's previous decision did not consider the evidence presented by Citizens, AmerGen has provided no justification for its attempt to exclude this evidence from the proceeding.[3]

IV. Formalistic Objections Are Unfounded

AmerGen takes formality to a ludicrous extreme when it asks to strike Attachment 5 simply because it is an attachment, rather than an Exhibit. AmerGen Motion in Limine at 9. To negate this challenge, Citizens are happy to label Attachment 5 as Exhibit 37. NRC Staff

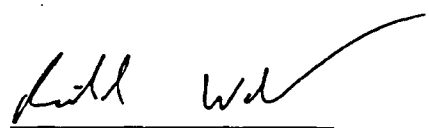
[3] AmerGen mislabels its heading on this issue as concerning the "embedded interior of the drywell shell." In fact, Citizens are not providing testimony about corrosion in the embedded region, which is below the exterior floor of the sandbed region. Instead, the testimony concerns interior corrosion in the sandbed region above the exterior floor but below the interior floor at level 10'3".

also object to Attachment 5 on the grounds that is argumentative, an argument of counsel, or repetitious. NRC Motion in Limine at 7. None of these objections are valid. Even if the document were repetitious or argumentative, that would only justify striking offending portions, not the whole document. With regard to the remaining argument, Citizens Initial Statement clearly differentiates between the background and statement of facts, which are the same as Attachment 5, and the arguments of counsel. In fact, Attachment 5 is purely factual and explains in detail how many of Dr. Hausler's opinions were formed. Citizens also included the text of Attachment 5 in the statement of initial position for the convenience of the panel. This does not make Attachment 5 inadmissible.

CONCLUSION

For the foregoing reasons, AmerGen's and NRC Staff's Motions in Limine should be denied in their entirety.

Respectfully submitted



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Dated: August 1, 2007

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July 29, 2007

Mr. Webster:

I have read "AmerGen's motion in limine to exclude portions of Citizen's initial written submission".

Just as medical doctors, for instance, have to be well versed in general medicine, before specializing in surgery or any other medical specialty, so have corrosion engineers to be well versed in the various basic scientific and technical aspects underlying their science. Corrosion Engineering is probably one of the most complex technical endeavors one can think of. It involves well over 30 odd distinctly separate sciences [1] from electrochemistry to metallurgy and chemistry as well as physics, including semiconductor phenomena. It is precisely the broadly conceived curriculum at the Swiss Federal Institute of Technology, one of the foremost European institutions of higher learning that prepares for, among many other possibilities, the entry to such a demanding field as Corrosion Science and Technology. Since gaining that education, I have acquired additional expertise through long experience.

For example, in the work carried out for EPRI aimed on the development of a corrosion inhibitor for the aggressive solvents in use for chemical cleaning of nuclear steam generators, I have demonstrated detailed knowledge of organic chemistry, electrochemistry, electrolyte (complexing) chemistry, as well as metallurgy and chemical process chemistry (removal of denting) [2]. The inhibitor became commercial and was used around the world in many cleanings for at least 20 years. (It should be mentioned, perhaps that the work was carried out under EPRI guidance in close cooperation with Babcock and Wilcox, Westinghouse and Combustion Engineering, as well as numerous other companies).

With regard to expertise on coatings, one of the activities a corrosion engineer is often called upon is failure analysis. I routinely carried out such failure analyses at Petrolite as

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[1] see Donald Tuomi: *Corrosion, the most general problem in material science,* published in Corrosion Chemistry, George R. Brubaker. Beverly P. Phipps, editors, ACS Symposium Series, Vol 89, pg. 1, 1979. The Symposium had been organized and conceived by Dr, R. H. Hausler, see foreword.

[2] This work was done after the nuclear power plant operators under the oversight of NRC had badly misjudged the effects of galvanic coupling between Inconel and carbon steel on the corrosiveness of the cleaning solution in use at the time.

a service to customers and at Mobil for the purpose of understanding failure mechanisms of oil field tubulars. Such tubulars are frequently internally coated and failures of these coating systems were rather frequent. One of the most frequently used coatings is based on epoxy chemicals (Tuboscope's TK-7 for instance). One of the failure mechanisms, established in detailed examination by means of Scanning Electron Microscope studies of the underlying steel surface is the formation of a minute oxide layer prior to coating. This, in addition to slow diffusion of water and corrosive gases across the epoxy boundary is often the cause for de-lamination, blister formation, and subsequent breaking of the bubble and rapid attack of the metal. The various and detailed studies regarding coating failure I performed in line of service to either Gordon Lab, Petrolite, or Mobil are too numerous to list.

With regard to statistical experience, please find attached a summary of selected papers that I have published that used statistical analysis to assess corrosion. The summary also includes my selected experience with statistics gained through education, teaching, and practical experience. Once again, I trust the panel will find my experience to be more than sufficient for the present purpose.

Best regards

Rudolf H. Hausler

Selected Papers by Dr. Rudolf H. Hausler on the Application of Statistics in Diverse Corrosion Studies

1. **The Use of Statistical Design and Analysis in the Development of a Corrosion Inhibitor Test;** R. H. Hausler, L.A. Goeller, R.H. Rosenwald, Proceedings of the National Association of Corrosion Engineers, 26 the National Conference, March, 2-6, 1970, paper # 63
2. **Rust Inhibition and Inhibitor Testing, A Critical Discussion of Mil –I-25017-C,** R. H. Hausler, R. C. Kunzelman, Materials Protection and Performance, 11. (#11) 27, 1972, *(This paper uses binomial statistics to critically analyze results obtained from a "go-no-go" test procedure routinely used by military procurement offices).*
3. **CORROSION MANAGEMENT IN THE ARUN FIELD L.M. Riekels, R.V.** Seetharam, R.M. Krishnamurthy, C.F. Kroen, J.L. Pacheco, R.H. Hausler, V.A.M. Semerad, CORROSION/96, paper No. 24, NACE, 1996 *(This paper involved extreme value statistics for the prediction of the useful life of oilfield tububulars)*
4. **DEVELOPMENT OF A CORROSION INHIBITION MODEL: I. LABORATORY STUDIES,** R.H. Hausler, T.G. Martin, D.W. Stegmann, M.B. Ward, CORROSION/99, paper No. 2, NACE 1999
5. **DEVELOPMENT OF A CORROSION INHIBITION MODEL: II. VERIFICATION OF MODEL BY CONTINUOUS CORROSION RATE MEASUREMENTS WITH NOVEL DOWNHOLE TOOL.** T.G. Martin, M.T. Cox, R.H. Hausler, R.J. Dartez, P. Pratt, J.C. Roberts, CORROSION/99, paper No. 3, NACE 1999. *(both papers, 4 and 5, involve the use of statistics in the design and evaluation of the experimental approaches as well as the extensive use of contour plots).*

Dr. R. H. Hausler, Educational Background in Statistics and Due Diligence

1. Dr. Hausler received formal training in Theory and Application of Statistics as part of the compulsory curriculum in the second year at the Swiss Federal Institute of Technology, one full semester course.
2. Dr. Hausler attended a two day seminar on Statistical Design and Evaluation of Experiments by Stewart Hunter and Norman Draper presented in Detroit May 19-20, 1967.
3. Dr. Hausler subsequently studied statistics on his own time using the following bibliography:
    a. Owen L. Davies: *Statistical Methods in Research and Production (Hafner)*
    b. Owen L. Davies: *Design and Analysis of Industrial Experiments* (Hafner)
    c. W. G. Cochran, G.M. Cox: *Experimental Design* (J. Wiley)
    d. C.A. Bennett, N.L. Franklin: *Statistical Analysis* (J. Wiley)
    e. K.C. Peng: *Design and Analysis of Scientific Experiments* (Addison, Wesley)

f. M. J. Moroney: *Fact and Figures,* (Pelican)
g. N.R. Draper, H. Smith: *Applied Regression*
h. G. E. P. Box, J.S. Hunter, *Fractional Factorial Design,* published in Technometrics, 3., (#3), 311 (1961), and 3., (#4), 449 (1961)
i. J.S. Hunter, *Some applications of Statistics to Experimentation (EVOP),* Chem. Eng. Progress Symposium Series Vol. 56, #31, (1960)
j. L. Bryce Anderson, *Statistics in Chemical Engineering,* (in 12 parts in CE Refresher, Chemical Engieering, 69, (22) 119-123 (1962), and 11 subsequent installments.

4. Lecturing in Statistics

While at UOP (former Universal Oil Products Company, Mount Prospect, Illinois) Dr. Hausler developed a lecture series of 20 sessions of 2 hours each for the scientists and engineers in UOP's research department. The subjects covered were defines as

- Basics, Variance, F-test, and t-test
- Analysis of variance (examples from UOP researchers)
- Factorial Designs (examples from UOP Catalyst and Chemical Development Activities)
- Simple and Multiple Regression'
- Theory of least squares
- Assumptions of Normal Distribution
- Randomization (effectiveness of experimental designs)
- EVOP (Evolutionary Operations)
- Computer Applications

All Lectures were patterned around live, timely applications.

- **Part 1**: Measures of Variability
- **Part 2**: Establish the Difference between two Analysts
  - Compare means on basis of "some sort of variance"
  - Compare the mean of the differences on some sort of variance
  - Calculate complete ANOVA
- **Part 3**: Ground Rules
  - Comparison of Means
  - Applications of F- Test
- **Part 4**: What do Different Variances mean
- **Part 5**: Basic Principle of the Analysis of Variance (ANOVA)
- **Part 6**: Real live Examples
  - Work done by Ed. Latos
    - Introduction of Anova to Crossclassification
- **Part 7**: Real Live Example
  - Work Done by Ed. Latos
    - Develop Equations for the Residual

        - The Interaction and its Origin
    - **Part 8**: Discussion of Homework
        - Review of 2 stage process and, Anova and Error Propagation
        - The Meaning of the various sums or squares in the Anova
    - **Part 9**: Discussion of Homework
        - How to separate interaction from residual
    - **Part 10**: Regression Analysis and Polynomial Curve Fitting
        - Application of Orthagonal Polynomials in Analysis of Variance.
    - **Part 11:** Introduction of Gaussian Error Propagation
    - **Part 12:** The General Analysis of Variance
    - **Part 13:** 3 Factor Experiments
    - **Part 14:** Design of Experiments, Factorial Theory
    - **Parts 15 through 20:** These parts dealt specifically with Factorial and Fractional Factorial Designs of Experiments, both in Theory as well as in practice.

5. **Additional Activities**

Dr. Hausler used statistical approaches in nearly all his consulting work. For instance: One of the clients in Japan was interested in establishing the use of 3% Cr-steel for oil and/or gas production in Venezuela. An extensive literature study revealed a multitude of experimental and field data, which needed to be correlated. Multiple correlation however revealed that there was no consistent picture, and all claimed conclusions were either invalid (because of irrelevant experimental procedures) or not applicable because of incomplete description of parameter field. A publication of this work is pending.

Dr. Hausler has also bee called upon repeatedly to analyze ILI pipeline data (intelligent line inspection) for the purpose of evaluating corrosion mechanisms, and/or inhibition effectiveness. In the course of this work extensive use of extreme value statistics was made in order to assess corrosion rates and predict time to failure.

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)	)	August 1, 2007
	)	

CERTIFICATE OF SERVICE

I, Karen Hughes, of full age, certify as follows:

I hereby certify that on August 1, 2007, I caused Citizen's Opposition To Amergen And NRC Motions In Limine in the above captioned matter to be served via email and U.S. Postal Service (as indicated) on the following:

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