

CERTIFIED

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MEETING DATE: 1/23&24/80
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MINUTES OF THE ACRS SUBCOMMITTEE MEETING ON METAL COMPONENTS
WASHINGTON, DC

The ACRS Subcommittee on Metal Components met at 11:30 a.m. in Room 1046, 1717 H St., NW, Washington, DC on January 23 and 24, 1980 to discuss the status of the steam generator problems with the Steam Generator Owners Group (SGOG) and the unresolved safety issues concerning pressure vessels, BWR nozzle cracking, and component supports by the NRC Staff. Also heard at this meeting was the problem on Westinghouse low-pressure turbine disc cracking.

There were no written statements or requests for time to make oral statements from any members of the public.

The ACRS members present at the meeting were: P. G. Shewmon, presiding, M. Bender and H. Etherington. The consultants were: H. Corten, R. Dillon, and M. Wechsler. E. G. Igne was the Designated Federal Employee.

Handouts received at the meeting are attached to the Office Copy of the Minutes.

MEETING OF JANUARY 23, 1980

Mr. O. Batum, Chairman of the Steam Generator Owners Group

Mr. O. Batum stated in his introduction that (1) the problems associated with steam generators are of primary concern of the utilities because of economic reasons, (2) the utilities have bonded together and formed a group to share experiences and coordinate a program to resolve the problem expeditiously and efficiently, and (3) there is no guarantee that the steam generator degradation will not continue to occur in the future.

The Steam Generator Owners Group came into being in 1977, when the utilities recognized the importance of the steam generator problems and the needed research and investigation to cope with the problems. Mr. Batum stated that additional efforts by the NRC, NSSS, DOE, and EPRI are involved with the resolution of this problem. At present, three foreign utilities, Japan, France, and Sweden have shown their intent to join the SGOG.

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EPRI and the SGOG are intertwined in an organization which receives funds from each for one common program. EPRI is the program manager, and S. Green is the director of the Steam Generator Project Office. At the present time, 17 out of 28 utilities representing operating PWRs are members of the SGOG. This number represents 28 out of the 44 units presently in operating. All types of steam generators are represented by the SGOG.

The total funding for research and development is about 52 million dollars; the SGOG portion is 36 million dollars and EPRI's share is 16 million dollars. This funding expires in 1982. The program will address wastage, denting, pitting, cracking, erosion, and corrosion of steam generator tubes. High cycle fatigue cracking as experienced in B&W-type steam generators will also be addressed. In addition, the problem of improving the carryover design of the steam generator will be studied.

Mr. Batum stated that when all the data from the program are in hand a report recommending modifications, changes in operating specification or redesign of equipment, will be issued to be ultimately incorporated by the effected utilities. The utilities will not be bound by the recommendations, unless mandated by the NRC.

Mr. Mundis, EPRI

Mr. Mundis of EPRI described the Nondestructive Examination (NDE) program of the SGOG. The objectives of the program are: (1) to identify the precursors of the damage, (2) to find defects that occur in the support plate or the tubes of the steam generators, (3) to determine the effectiveness of possible corrective measures in a nondestructive way, and (4) to minimize the radiation exposure during NDE.

Flaws in tubes are currently being detected by the following methods or techniques:

- Optical Scanner
- Strain Gauge
- Multi-frequency Eddy Current Probe
- Fiber Optic

Flaws in the support plates are detected by the following:

- Radiography
- Magnetic Flux Leakage
- Fiber Optics

Various methods were discussed to detect support plate crevice and tube-to-tube support plate crevice blockage.

Mr. R. Zong, Philadelphia Electric Corporation

Mr. Zong discussed the NDE Center that EPRI is having built in North Carolina. The main objective of the Center is to transfer new development in NDE from the laboratory to the field. At present, there is no organization in the United States that does this. This includes using new equipment in the field and in the training of the people to use this equipment.

The Center will be operated by J.A. Jones Applied Research Company under the direction of T. Nemzek. The Center will provide the utility industry a dedicated NDE Center.

Mr. S. Green, EPRI

Mr. Green is the Director of the Steam Generator Project Office at EPRI. Mr. Green discussed the chemistry and materials aspect of the program. He stated that the problems and solutions represent a very complex interaction among the various disciplines of chemistry, materials, and thermal hydraulics. The planned product by the end of 1982 is to provide information in technology to utilities so that each can take actions best suited to their individual plant to minimize steam generator degradation due to corrosion over the life of the plant.

Mr. Green reviewed the status as of January 1980. He stated that the reasons for corrosion occurring in the steam generator tubes, mainly tube denting and corrosion in tubesheet crevices are understood reasonably well. The effects of impurities and steam generator parameters on tube degradation is understood qualitatively. No quantitative data exist to justify corrective actions for improving feedwater purity. At the present, they can only state that minimizing the impurity ingress helps, but the optimum level is not known, but data exist

indicating that a neutralizer, namely boric acid, has shown promise in slowing down tube denting.

The program in chemistry and materials are divided as follows:

- Effect of plant design and operation on water chemistry of the steam generator.
- Causes of denting and corrosion.
- Measures being considered for minimizing corrosion and denting.
- New materials and design.

EPRI has visited Japan to gain information in their program in plant operation and chemistry control. The Japanese do not have as much problem with their steam generators as the U.S. Mr. Green stated that the Japanese experience is factored into the program.

Mr. J. Lang, EPRI

Mr. Lang presented the topic of thermal, hydraulics, and structural aspects of the steam generator problem. The status of the problem thus far is as follows:

- Tests at prototypical pressures and temperatures have determined that dryout occurs in the drilled holes in the support plates where the tubes touch the drilled holes. A similar phenomenon is observed in the quatrefoil land design. Chemical deposits in the dried out area were found.
- Similar tests in prototypical pressures and temperatures have shown that dryout occurs within a half an inch below the top of the sludge pile; corresponding to observed wastage damage.
- Present thermal/hydraulic computer codes can predict average conditions in steam generators. More work is required in predicting local phenomena.
- Structural studies reveal stresses to be within code allowables.

The utilities then discussed some of the improvements done on the secondary side of the plants.

Mr. L. Lewis, Duke Power Company

Highlights of Mr. Lewis' presentation are as follows:

- The Oconee Station is a B&W, PWR design, with a once-through steam generator.
- The plant has always been on AVT chemistry.

- No copper or copper alloys are used in the system.
- Tube degradation is caused by low stress, high cycle fatigue, and erosion.
- Feedwater purity was increased by using condensate polishing system.
- The forcing function for tube vibration was reduced by stopping the daily turbine control valve testing at 96% power.
- Erosion of the steam generator tube is caused by impingement of magnetite pieces on the tube. More study of this phenomenon is being performed by EPRI as part of the SGOG program.
- Doses due to steam generator inspection have been showing a downward trend as more experience is gained.

Mr. A. Curtis, Rochester Gas and Electric Company

Highlights of Mr. Curtis' presentation are as follows:

- The Ginna plant operates on the shore of Lake Ontario.
- RG&E was instrumental in developing multi-frequency Eddy current probe testing in this country.
- Significant radiation exposure reduction is obtained by training the maintenance personnel on mock-ups.
- Use of multi-frequency testing reduces inspection time by 60%.
- AVT chemistry with full flow condensate polishing system is used.
- Oxygen ingress is reduced by recycling coolant through condensate polishing system at startup.
- No change in tube denting and little wastage have been observed. Only about 2-3% of the tubes are plugged after 10 years of operation.

Mr. G. Slifer, Public Service Electric & Gas Company

Highlights of Mr. Slifer's presentation are as follows:

- To date no primary to secondary leakage has occurred
- Condenser inleakage caused Salem to retube with AL6 material.
- Cathodic protection has been upgraded by installing additional electrodes and rectifiers on each of the circulating water systems.
- Full flow condensate polishing system has been installed.
- Salem equipment meets Westinghouse water chemistry specifications.

Mr. J. Strosnider, NRC Staff

Mr. Strosnider addressed the following three areas.

1. Problem description including the review of the degradation mechanisms, summary of affected units and a discussion on the safety significance of the degradation that has occurred.
2. Problem resolution including the status of programs involved and also the potential changes in regulatory requirements.
3. Expectations from future steam generators that will be coming into service.

Problems in steam generators are wastage, caustic stress corrosion, denting, and intergranular attack which occurred at Point Beach within the tubesheet crevice.

For a tube failure which occurs not concurrent with the MSLB or LOCA, the conclusion is that there is no anomalous or unacceptable system behaviors, no unacceptable offsite doses and only minor procedural and/or training improvements will be identified.

For a tube failure and LOCA there is a potential for steam binding and for the MSLB a potential offsite exposure. These conditions are being addressed by a Task Action Plan. A report by the Reactor Safety Branch should be published in a month or so.

Task Action Plans A-3, -4, and -5 have been rewritten into one write-up. The Plan includes system analysis of transients and postulated accidents, evaluation of ISI, ISI cost-benefit analysis, and evaluation of steam generator tube integrity.

Steam binding might be a significant problem if leakage rate from the secondary to the primary system is about 1500 gpm concurrent with a LOCA. About ten complete tube failures will give about 1500 gpm leakage.

A discussion on the monitoring program ensued. The committee's concern was the evaluation of the monitoring information that is being submitted by the utilities. Is it going to be compared to the manufacturing specifications?

Will the data provide failure trend for any given set of plant performance and chemistry? Are we going to learn something from it, without being arbitrary and capricious? Will statistical analysis be performed?

It was stated by the committee that the Plan is a good one. but the schedule for completion should be realistic. It was found during the discussion that the Plan deals with the problem of tubes having a high rate of failure, and does not resolve the generic problem by itself. Tube failures will continue in the future but it is hoped that the failure rate will decrease significantly. That should be the goal of the Plan.

The Task Action Plan should be completed by May 1980.

Mr. R. Emch, NRC Environmental Evaluation Branch

Mr. Emch discussed ALARA as applied to steam generators. The ALARA concept is set forth in 10 CFR Part 20. ALARA means that your dose should be as low and reasonably achievable (ALARA) taking into account cost and socio-economic benefits. For example, steam generator tube inspection and plugging should be weighed against exposure and benefits.

Mr. Emch then discussed steam generator tube inspection and the doses received at various plants. He stated that the limit of 5 man-rems per year is safe and is used for both inside and outside the plant.

The meeting was adjourned at 5:36 p.m.

MEETING OF JANUARY 24, 1980Mr. W. Hazelton, NRC Staff

Mr. Hazelton, as a spokesman for the Staff, presented an introduction of the status of the unresolved generic item on the integrity of the reactor pressure vessel. The developments in this area are being performed by various industry groups, vendors, and the HSST program.

Mr. K. Hoge, NRC Staff

Mr. Hoge discussed the subject relating to the low upper shelf life of pressure vessel materials in a program called Integrated Surveillance Program. Mr. Hoge stated that the purpose of the program is to ensure that a wide safety margin against failure during normal operation exist. In addition, these margins should be large enough to ensure vessel integrity during transient and accident conditions and to provide the flexibility of operation during emergency operation. Mr. Hoge then presented a brief history in pressure vessel evaluation and regulatory requirements.

The results of the Staff's Systematic Evaluation Program on the Integrity of the Pressure Vessel is documented in NUREG-0569, dated December, 1979.

The lower upper shelf energy problem may affect about 21 reactor vessels by the end of its life. The regulation requires that if the energy value is less than 50 ft-lbs, (1) augmented inservice inspection of the reactor vessel beltline area be instituted, (2) additional fracture toughness information be acquired, and (3) fracture mechanics analysis be performed to determine that sufficient safety margin exists.

The original 50 ft-lb energy limit first appeared in the Appendix G 1971 version. One reason this value was chosen was that the Staff felt that if they had 50 ft-lbs they had good correlation with K_{IC} values (about 150,000 psi- \sqrt{in}) which would provide adequate toughness for normal operating conditions and that calculation indicates that the pressure vessel will leak before break. Another reason was that a good quality vessel material should have about 50 ft-lb energy. Yankee Rowe pressure vessel had a start-of-life Charpy

Energy of 55 ft-lbs. It is now at a level of 50 ft-lbs and projected to 42 ft-lb at the end-of-life. The Yankee Rowe pressure vessel material is 302-B.

Saturation effect will tend to extend the life of some vessels.

Mr. Hoge stated that linear elastic fracture mechanic (LEFM) is not sufficient to deal with the low upper shelf problem. An elastic-plastic type analysis, Mr. Hoge stated, should provide an approach to the low upper shelf energy.

Mr. Hoge next discussed the B&W integrated surveillance program. This concern arose because the capsule holder on B&W plants failed by fatigue. Because of difficulties in replacing these capsule in their original vessels, it was proposed that these capsule be placed instead in reactors not yet on line, or in host reactors. There are three host reactors. Calculations have shown that all of these vessels will be exposed to very similar fluence and neutron spectrums, both in the capsule location and vessel walls. The Staff concurs with the evaluation and have issued a safety evaluation report.

Mr. Hoge next discussed the B&W atypical weld problem. In this concern the silicon content was higher than normal and the nickel content lower than normal in the weld material. Even with lower Charpy Energy values, the stresses in the region of the atypical welds are low as to cause no concern. Residual stresses according to the Staff pose no problems. To be conservative the Staff has requested that utilities with the affected atypical welds to operate with pressure-temperature limits that reflect a conservative approach using 120 for the RT_{NDT} .

Mr. Hoge next discussed pressure vessel fluence. He mentioned that GE fluence calculations were low by factors of 6 or 8. GE has now recalculated the fluence based on new computer codes. The new calculations now correlate with the surveillance specimen pulled from the operating plants. Combustion Engineering (CE) also had problems with their one dimensional code. The Staff has stated that only Ft. Calhoun is affected by the CE error. No reasons were given for this discrepancy. All pressure

vessels have surveillance capsules that can be removed and checked for dosimetry.

Mr. Hoge next discussed the evaluation of the integrity of the SEP vessels as reported in NUREG-0569. In conclusion, Mr. Hoge stated that: (1) all the pressure vessels were acceptable, and (2) the vessels designed according to ASME Section I and Section VIII are approximately equal to those designed by Section III. The material surveillance program of all the vessels was found to be acceptable although in all cases it did not meet Appendix H requirements.

The Subcommittee deferred until a later date a discussion on the philosophy and practices of in-service inspections of pressure vessels. Also deferred was the topic of acoustic emission methodologies. Both of these topics will be covered at a later meeting on ISI.

Mr. R. Johnson, NRC Staff

Mr. Johnson discussed Task Action Plan A-11, Reactor Vessel Material Toughness. Strong contributors to embrittlement sensitivity are: (1) relatively high levels of residual elements such as copper and phosphorous, and (2) factors in weld parameters such as weld heat input and flux composition.

Some beltline welds exhibit low values of absorbed energy at the Charpy upper shelf temperatures. With neutron radiation these marginal welds could fall to energies less than the 50 ft-lb level required by 10 CFR 50. Should this happen, the licensee is offered at least three options. They are: (1) show by calculation that the steel has enough toughness to maintain an adequate safety margin, (2) anneal the vessel to restore toughness, or (3) perform a 100% volumetric nondestructive inspection to show the largest flaw present is too small to initiate failure.

Current linear-elastic fracture mechanics (LEFM) techniques are inadequate to predict the behavior for a steel with 50 ft-lb energy levels because they assume crack plastic deformation violates the LEFM boundary conditions. Therefore, NRC sponsored work on elastic-plastic fracture mechanics (EPFM). The goal is to provide the analytic basis for a more meaningful assessment of the safety margin in pressure vessels at operating temperatures. This work has led to some favorable results. This work is detailed in NUREG-0311, dated August 1977. The approach uses the J-Integral method developed by Rice of Brown University and Hutchinson of Harvard. Their method may be used to reduce fracture experiment data and provide fracture resistance curves commonly known as J-R curves.

Subtask of A-11 are listed below:

- Identify and measure the mechanical properties which control tearing and stability type of failures.
- Develop a method for analyzing structural members that incorporates postulated flaws under conditions which could lead to tearing and stabilizing fractures.
- Define reactor vessel safety criteria to avoid failure.
- Evaluate the feasibility of in-place reactor vessel annealing to regain toughness.
- Evaluate actions which might lessen the severity of actual neutron radiation damage or improve accuracy of calculation of such damage.
- Establish a computer information system for storage and retrieval of reactor pressure vessel material data.

Problems concerning the use of the J-Integral methodology was explored by the Subcommittee. One of the main concern was obtaining data from older vessels so that the J-Integral method can be used. The Staff stated that they will use similar material, i.e., chemistry and fabrication process to obtain the material characteristics need to use the J-Integral approach. Other fracture mechanic specimen like the WOL specimen can be used to characterize the material. Another problem was the use of new technology in solving problems today with no "aging" experience to determine the validity of the method.

Yankee Rowe pressure vessel has according to the Staff low upper shelf life. The logic for accepting the adequacy of this vessel without material properties from this vessel was difficult to understand.

Mr. Johnson stated that at a meeting of the Committee on Safety of Nuclear Installations, the following conclusions were reached: (1) a single parameter can adequately characterize the crack instability conditions and crack extensions, (2) the J-Integral is the most general parameter for that purpose, and (3) recognized that the J-Integral could be related to crack opening displacement and other fracture parameters. The meeting transcript, as well as other information in this area, will be available in NUREG reports.

The Task Action Plan A-11 will be completed by the end of December 1980.

Mr. Johnson next covered the subject of thermal shock on pressure vessels. This area has been renamed. It is now called faulted condition evaluation. He stated that if a crack of sufficient length is present in the vessel a thermal shock as a result of injecting cold water into the vessel could propagate the crack. Presupposing that a crack is present, analysis leads to the following conclusions:

- Total stresses under thermal shock can cause crack extension.
- Relatively small cracks are more likely to grow because stresses are higher near the inside surface.
- Crack growth would arrest within the wall thickness.

Mr. R. Snaider, NRC Staff

Mr. Snaider addressed the generic activity on BWR feedwater nozzles and control rod drive nozzle cracking. Both of these problems were caused by high cycle thermal fatigue by fluctuating water flow.

General Electric has redesigned the feedwater nozzle configuration so that the thermal fluctuation caused by water flow is minimized. Modifications are being made in some plants. Resolution of this generic item is scheduled for the end of 1985.

In the control rod drive nozzle cracking problem thermal fatigue is the probable cause. A fix for this problem has been approved by the Staff and will be implemented by December 31, 1981.

In a brief open caucus, the Subcommittee was concerned about: (1) low upper shelf energy of some pressure vessels, and (2) the resolution of generic items. Concerning the first item, the Subcommittee decided to meet again after the documents on this matter have been studied. Concerning the latter item, the Subcommittee will discuss the criteria for the resolution of the generic matters during a full ACRS meeting.

Concerning Task Action Plan A-10, the Subcommittee would like J. Ebersole to study the proposed fix to determine if it is acceptable.

Mr. Snaider next covered Task Action Plan A-12 concerning the problem on steam generator and reactor coolant pump supports. The question on these supports hinges on the potential for low fracture toughness caused by lamellar tearing. This problem was discovered in 1975 and 1976. This case was resolved by heating the supports to a level where this phenomenon does not occur.

After inspection of other plants, it was viewed by the Staff to be a generic problem because similar materials were used in the supports. The material that is susceptible to lamellar tearing is maraging steel of 300-350 ksi yield strength. The result of the Staff's review indicates that six plants are satisfactory, eleven plants may need further review, and twenty-one plants require in-depth plant specific review.

The acceptance criteria is documented in NUREG-0577. The licensee is currently reviewing the affected plants.

Mr. Snaider next discussed the radiation effects on the reactor vessel supports. The problem here is the effect of low energy or less than 1 Mev neutron radiation on the support materials and the resulting NDT shift. The problem was brought out on North Anna by VEPCO in discussing the effect of the impact of low energy neutron on the neutron shield tank. Damage potential to the support by analysis performed by NRL indicates a definite possibility of excessive NDT shift for the particular material used. NRC Staff review of operating plants indicates that 13 plants could be affected. Calculation by the Staff indicates that a transition to a brittle state could occur within 20 years. The Staff is currently investigating the problem, which may take four years before it is resolved because of test restraint.

Mr. W. Hazelton next presented the status of the low pressure turbine disc cracking problem that is currently affecting only Westinghouse turbines. The problem was found on the Surry 2 turbine during inspection of the turbine assembly during refurbishing at the Westinghouse Charlotte plant. Cracks have been found in the core and keyway regions of the disc. These cracks are attributed to stress corrosion cracking phenomenon.

Westinghouse developed a UT method where a probe could be located at the outside diameter of the disc to detect bore region cracks. This method was developed in order to check for cracks in the bore region without disassembling the disc from the shaft.

Cracks have been detected in a number of plants. Crack depth up to a little over half an inch has been found in the keyway area. Bore area cracks have also been found. In one case, Zion 1, the crack was about 1.2 inches deep by 2.5 inches long.

The critical crack size for most discs is about 1 - 1.5 inches.

The Staff has issued a letter to the utilities with Westinghouse turbines to address the turbine missile problems at their plants.

NOTE: A complete transcript of the open sessions of this meeting is on file in the NRC Public Document Room at 1717 H St., NW, Washington, DC, or can be obtained from International Verbatim Reporters, Inc., 499 S. Capitol Street, Suite 107, Washington, DC (202) 484-3550.

Endowment for the Humanities for projects beginning after June 1, 1980.

5. Date: January 18, 1980. Time: 9:00 a.m. to 5:30 p.m. Room: 307. Purpose: To review NEH Fellowships in Category C applications in Sociology and Literature submitted to the National Endowment for the Humanities for projects beginning after June 1, 1980.
6. Date: January 18, 1980. Time: 9:00 a.m. to 5:30 p.m. Room: 500. Purpose: To review NEH Fellowships in Category B applications submitted to the National Endowment for the Humanities for projects beginning after May 1, 1980.
7. Date: January 19, 1980. Time: 9:00 a.m. to 5:30 p.m. Room: 314. Purpose: To review NEH Summer Stipend applications in Contemporary Literature, and Literary Theory and Criticism submitted to the National Endowment for the Humanities for projects beginning after June 1, 1980.
8. Date: January 21, 1980. Time: 9:00 a.m. to 5:30 p.m. Room: 1134. Purpose: To review NEH Fellowships in Category C applications in Humanities for Two-Year College Teachers submitted to the National Endowment for the Humanities for projects beginning after June 1, 1980.
9. Date: January 22, 1980. Time: 9:00 a.m. to 5:30 p.m. Room: 807. Purpose: To review NEH Summer Stipend applications in Linguistics, Speech, Communications, Composition, Rhetoric, and Theater submitted to the National Endowment for the Humanities for projects beginning after May 1, 1980.
10. Date: January 23, 1980. Time: 9:00 a.m. to 5:30 p.m. Room: 314. Purpose: To review NEH Summer Stipends applications in English Literature: Restoration to the Present submitted to the National Endowment for the Humanities for projects beginning after June 1, 1980.

Because the proposed meetings will consider financial information and disclose information of a personal nature the disclosure of which would constitute a clearly unwarranted invasion of personal privacy, pursuant to authority granted me by the Chairman's Delegation of Authority to Close Advisory Committee Meetings, dated January 15, 1979, I have determined that the meetings would fall within exemptions (4) and (6) of 5 U.S.C. 552b(c) and that it is essential to close these meetings to protect the free exchange of internal views and to avoid interference with operation of the Committee.

If you desire more specific information, contact the Advisory Committee Management Officer, Mr. Stephen J. McCleary, 806 15th Street, NW., Washington, D.C. 20506, or call 202-724-0367.

Stephen J. McCleary,
Advisory Committee, Management Officer.

[FR Doc. 79-39638 Filed 12-27-79; 8:45 am]
BILLING CODE 7536-01-M

Humanities Panel Advisory Committee; Notice of Changes

This is to announce changes in two meetings of the Humanities Panel Advisory Committee.

1. The meeting to be held on January 3-4, 1980 in Room 897, National Endowment for the Humanities, 806 15th St., N.W., Washington, D.C. to review Museums and Historical Organizations Humanities Projects Program applications submitted to the National Endowment for the Humanities for projects beginning after April 1, 1980 has been changed. It will be held in Room 807 of the National Endowment for the Humanities on January 9-10, 1980.

2. The meeting to be held January 10, 1979 in the 5th Floor Conference Room, National Endowment for the Humanities, 806 15th St., N.W., Washington, D.C. to review NEH Libraries Humanities Projects Program applications submitted to the National Endowment for the Humanities for projects beginning after April 1, 1980 has been changed. It will be held in Room 911 on January 16, 1980.

Both of these meetings were announced on page 70937 of the Federal Register dated December 10, 1979.

Stephen J. McCleary,
Advisory Committee Management Officer.

[FR Doc. 79-39639 Filed 12-27-79; 8:45 am]
BILLING CODE 7536-01-M

Humanities Panel Advisory Committee; Notice of Meeting

December 26, 1979.

Pursuant to the provisions of the Federal Advisory Committee Act (Public Law 92-364 as amended,) notice is hereby given that a meeting of the Humanities Panel will be held at 806 15th Street, NW., Washington, DC 20506, in room 314, from 9 am to 5:30 pm on Saturday, January 12, 1980.

The purpose of the meeting is to review NEH Fellowships in Category B applications submitted to the National Endowment for the Humanities for projects beginning after May 1, 1980.

Because the proposed meeting will consider financial information and disclose information of a personal nature the disclosure of which would constitute a clearly unwarranted invasion of personal privacy, pursuant to authority granted me by the Chairman's Delegation of Authority to Close Advisory Committee Meetings, dated January 15, 1978, I have determined that the meeting would fall within exemptions (4) and (6) of 5 U.S.C. 552b(c) and that it is essential to close the meeting to protect the free exchange of internal views and to avoid

interference with operation of the Committee.

It is suggested that those desiring more specific information contact the Advisory Committee Management Officer, Mr. Stephen J. McCleary, 806 15th Street, NW., Washington, DC 20506, or call area code 202-724-0367.

Stephen J. McCleary,
Advisory Committee, Management Officer.

[FR Doc. 79-39640 Filed 12-27-79; 8:45 am]
BILLING CODE 7536-01-M

NUCLEAR REGULATORY COMMISSION

Advisory Committee on Reactor Safeguards Subcommittee on Anticipated Transients Without Scram; Meeting

The ACRS Subcommittee on Anticipated Transients Without Scram (ATWS) will hold an open meeting on January 25, 1980, in Room 1046, 1717 H St., NW., Washington, DC 20555. Notice of this meeting was published December 20, 1979.

The agenda for subject meeting shall be as follows:

Friday, January 25, 1980; 8:30 a.m. Until
Conclusion of Business

The Subcommittee will discuss proposed resolution of ATWS with representatives of the NRC Staff.

Further information regarding topics to be discussed, whether the meeting has been cancelled or rescheduled, the Chairman's ruling on requests for the opportunity to present oral statements and the time allotted therefor can be obtained by a prepaid telephone call to the cognizant Designated Federal Employee, Mr. Paul A. Boehnert (telephone 202/634-3267) between 8:15 a.m. and 5:00 p.m., EST.

Dated: December 20, 1979.

John C. Hoyte,
Advisory Committee Management Officer.

[FR Doc. 79-39562 Filed 12-27-79; 8:45 am]
BILLING CODE 7580-01-M

Advisory Committee on Reactor Safeguards Subcommittee on Metal Components; Meeting

The ACRS Subcommittee on Metal Components will hold an open meeting on January 23-24, 1980, in Room 1046, 1717 H St., NW., Washington, DC 20555. Notice of this meeting was published December 20, 1979.

The agenda for subject meeting shall be as follows:

Wednesday, January 23, Approximately 11:00
a.m. (following the ACRS Subcommittee

meeting on the Surry Station) until conclusion of business. Thursday, January 24, 8:30 a.m. until the conclusion of business.

The Subcommittee will review the status of unresolved generic safety items involving pressure vessels, steam generators, and other pressure boundary components in its cognizant area of review.

Further information regarding topics to be discussed, whether the meeting has been cancelled or rescheduled, the Chairman's ruling on requests for the opportunity to present oral statements and the time allotted therefor can be obtained by a prepaid telephone call to the cognizant Designated Federal Employee, Mr. Elpidio G. Igne (telephone 202/634-3314) between 8:15 a.m. and 5:00 p.m., EST.

Dated: December 20, 1979.

John C. Hoyle,

Advisory Committee Management Officer.

[FR Doc. 79-39564 Filed 12-27-79; 8:45 am]

BILLING CODE 7590-01-M

Advisory Committee on Reactor Safeguards Subcommittee on the Surry Nuclear Station; Meeting

The ACRS Subcommittee on the Surry Nuclear Station will hold a meeting on January 23, 1980 in Room 1046, 1717 H St., NW, Washington, DC 20555 to continue its review of the Surry Station steam generator replacement program. Notice of this meeting was published December 20, 1979.

In accordance with the procedures outlined in the Federal Register on October 1, 1979, (44 FR 56408), oral or written statements may be presented by members of the public, recordings will be permitted only during those portions of the meeting when a transcript is being kept, and questions may be asked only by members of the Subcommittee, its consultants, and Staff. Persons desiring to make oral statements should notify the Designated Federal Employee as far in advance as practicable so that appropriate arrangements can be made to allow the necessary time during the meeting for such statements.

The agenda for subject meeting shall be as follows:

Wednesday, January 23, 1980; 8:30 a.m. Until the Conclusion of Business

The Subcommittee may meet in Executive Session, with any of its consultants who may be present, to explore and exchange their preliminary opinions regarding matters which should be considered during the meeting.

At the conclusion of the Executive Session, the Subcommittee will hear

presentations by and hold discussions with representatives of the NRC Staff, the Virginia Power and Electric Company, and their consultants, and other interested persons.

In addition, it may be necessary for the Subcommittee to hold one or more closed sessions for the purpose of exploring matters involving proprietary information. I have determined, in accordance with Subsection 10(d) of the Federal Advisory Committee Act (Pub. L. 92-463), that, should such sessions be required, it is necessary to close these sessions to protect proprietary information. See 5 U.S.C. 552b(c)(4).

Further information regarding topics to be discussed, whether the meeting has been cancelled or rescheduled, the Chairman's ruling on requests for the opportunity to present oral statements and the time allotted therefor can be obtained by a prepaid telephone call to the cognizant Designated Federal Employee, Mr. Gary Quittschreiber (telephone 202/634-3267) between 8:15 a.m. and 5:00 p.m., EST.

Background information concerning items to be discussed at this meeting can be found in documents on file and available for public inspection at the NRC Public Document Room, 1717 H Street, NW, Washington, DC 20555 and at the Swem Library, College of William and Mary, Williamsburg, VA 23185.

Dated: December 20, 1979.

John C. Hoyle,

Advisory Committee Management Officer

[FR Doc. 79-39565 Filed 12-27-79; 8:45 am]

BILLING CODE 7590-01-M

Advisory Committee on Reactor Safeguards Subcommittee on Licensee Event Reports (LERs); Meeting

The ACRS Subcommittee on Licensee Event Reports (LERs) will hold an open meeting on January 23, 1980, in Room 1167, 1717 H St., NW., Washington, DC 20555. Notice of this meeting was published December 20, 1979.

The agenda for subject meeting shall be as follows:

Wednesday, January 23, 1980; 11:30 a.m. Until Conclusion of Business

The Subcommittee will discuss the evaluation of LER information with representatives of NRC's newly formed Office of Analysis and Evaluation of Operational Data.

Further information regarding topics to be discussed, whether the meeting has been cancelled or rescheduled, the Chairman's ruling on requests for the opportunity to present oral statements and the time allotted therefor can be

obtained by a prepaid telephone call to the cognizant Designated Federal Employee, Dr. Andrew L. Bates (telephone 202/634-3267) between 8:15 a.m. and 5:00 p.m., EST.

Dated: December 20, 1979.

John C. Hoyle,

Advisory Committee Management Officer.

[FR Doc. 79-39566 Filed 12-27-79; 8:45 am]

BILLING CODE 7590-01-M

Advisory Committee on Reactor Safeguards Nuclear Regulatory Commission; Meeting

In accordance with the purposes of Sections 29 and 182b. of the Atomic Energy Act (42 U.S.C. 2039, 2232b.), the Advisory Committee on Reactor Safeguards will hold a meeting on January 10-12, 1980, in Room 1046, 1717 H Street, NW., Washington, DC. Notice of this meeting was published in the Federal Register on December 20, 1979.

The agenda for the subject meeting will be as follows:

Thursday, January 10, 1980

8:30 A.M.-12:30 P.M.: Executive Session (Open)—The Committee will hear and discuss the report of the ACRS Chairman regarding miscellaneous matters relating to ACRS activities.

The Committee will discuss proposed ACRS comments and recommendations to the U.S. Congress regarding the NRC Safety Research Program.

Portions of this session will be closed as necessary to discuss information the premature disclosure of which would frustrate the ACRS ability to perform its statutory function.

1:30 P.M.-5:30 P.M.: Meeting with NRC Staff (Open)—The Committee will hear and discuss reports from representatives of the NRC Staff regarding proposed NRC action plans to implement recommendations of the President's Commission and other studies of the Three Mile Island, Unit 2 accident.

Portions of this session will be closed as necessary to discuss Proprietary Information applicable to these items.

5:30 P.M.-6:30 P.M.: Executive Session (Open)—The Committee will discuss proposed methods to strengthen the role of the ACRS in accordance with the recommendations of the President's Commission on the accident at Three Mile Island.

Friday, January 11, 1980

8:30 A.M.-10:30 A.M.: Meeting with NRC Staff (Open)—The Committee will hear reports and will discuss proposed plans for NRC Implementation of the

TENTATIVE SCHEDULE

ACRS SUBCOMMITTEE MEETING ON METAL COMPONENTS
 WASHINGTON, DC
 JANUARY 23&24, 1980

(NOTE: Meeting will commence immediately after the conclusion of the Surry 2 Subcommittee meeting. Surry 2 Subcommittee meeting is scheduled to be adjourned about 11:00 a.m.)

JANUARY 23, 1980

	<u>APPROXIMATE TIME</u>
I. EXECUTIVE SESSION (OPEN) - P. Shewmon	11:30 a.m.
II. STEAM GENERATOR OWNERS GROUP - Ozen Batum, Chairman, So. Company Services	
1. Steam Generator Owners Group - Organization and Activities - O. Batum	11:40 a.m.
2. Description of Technical Programs - O. Batum	11:55 a.m.
3. Chemistry and Materials - Stanley Green, EPRI	12:00 noon
LUNCH	12:45 p.m. - 1:45 p.m.
4. Thermal Hydraulics and Structures - Jim Long, EPRI	1:45 p.m.
5. NDE - John Mudis	2:00 p.m.
6. Examples of various field applications	2:15 p.m.
BREAK	2:45 p.m. - 2:55 p.m.
III. NRC PRESENTATION ON STEAM GENERATORS	
1. Description of Problem	2:55 p.m.
2. Status of TAP A-3, A-4, A-5	3:10 p.m.
IV. ALARA APPLIED TO STEAM GENERATORS	
1. NRC Presentation	3:55 p.m.
2. Owners Group Comments	4:30 p.m.
V. CHAIRMAN'S SUMMARY AND ADJOURNMENT	5:00 p.m.

JANUARY 24, 1980

APPROXIMATE TIME

- | | |
|---|-------------------------|
| I. EXECUTIVE SESSION (OPEN) - P. Shewmon | 8:30 a.m. |
| II. UNRESOLVED SAFETY ISSUES (ACRS GENERIC ITEMS) | |
| 1. Pressure Vessel | |
| a. NDT Shift
(NUREG in by end of 1/80) | 8:40 a.m. |
| b. Fluence | 9:20 a.m. |
| c. Nil-ductility properties (TAP A-11)
(background material NUREG-0569) | 9:50 a.m. <i>Rev</i> |
| BREAK | 10:30 a.m. - 10:40 a.m. |
| d. Thermal Shock | 10:40 a.m. |
| 2. BWR Nozzle Cracking (TAP A-10)
(background material NUREG-0619) | 11:30 a.m. |
| LUNCH | 12:30 p.m. - 1:30 p.m. |
| 3. Steam Generator and Reactor Coolant Pressure Supports (TAP A-12)
(background material NUREG-0577) | 1:30 p.m. |
| 4. Disc Cracking * | 2:15 p.m. <i>Rev</i> |
| III. OTHER QUESTIONS BY THE SUBCOMMITTEE ON RELATED ITEMS | 2:30 p.m. |
| IV. CAUCUS | 3:00 p.m. |
| V. ADJOURNMENT | 3:15 p.m. |

NOTES:

1. At the discretion of the Subcommittee Chairman, scheduled items on 1/23 may be on 1/24 or vice versa.
2. The NRC Staff should prepare for each generic items in the following manner:
 - a. A short history of each item. Discuss any recognized shortcomings in the regulatory requirements or guidance.

ACRS SUBCOMMITTEE MEETING ON METAL COMPONENTS
WASHINGTON, DC
JANUARY 23 & 24, 1980

ATTENDEE LIST

ACRS

P. Shewmon, Chairman
M. Bender
H. Etherington
R. Dillon, ACRS Consultant
H. Corten, ACRS Consultant
M. Wechsler, ACRS Consultant
E. Epler, ACRS Consultant
E. Igne, Designated Federal Employee

ELECTRIC POWER RESEARCH INSTITUTE

J. Mundis
S. Green
J. Lang
J. P. Paine

SOUTHERN COMPANY SERVICES, INC.

O. Batum

DUKE POWER COMPANY

L. Lewis
A. Sudduth

VIRGINIA ELECTRIC & POWER COMPANY

H. McKay
J. Benton
E. Rivas
T. Stenzel

CONSUMERS POWER COMPANY

S. Frost
J. Lewis

NRC STAFF

R. Emch
A. Schwencer
J. Neighbors
B. Liaw
M. Grotenhuis
R. LaGrange
C. Serpan
S. Goldberg
J. Strosnider
J. Rayan
K. Hoge
D. van Rooyen
K. Parczewski
R. Gustafson
G. Georgiev
G. Knighton

PHILADELPHIA ELECTRIC COMPANY

R. Zong

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J. Hall
D. Kreps

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W. Fletcher
C. Hirst
M. Haley
F. Beldecos

STONE & WEBSTER ENGINEERING CORP.

R. Rosenberg
C. Grochmal

WISCONSIN ELECTRIC

G. Frieling

BABCOCK & WILCOX

W. Speight
J. Gutzwiller

POTOMAC ALLIANCE

F. Millar

CENTRAL ELECTRIC GENERATING BOARD
(UNITED KINGDOM)

R. Garnsey

ROCHESTER GAS & ELECTRIC

A. Curtis, III

CAROLINA POWER & LIGHT CO.

W. Way

KMC

D. Knuth

TENNESSEE VALLEY AUTHORITY

E. Harwell

CONSOLIDATED EDISON

P. Silliman
B. Bennett

MAGRAW-HILL

J. Dann

NORTHEAST UTILITIES

R. Laudens
J. Fackelmann

POWER AUTHORITY OF THE STATE OF NY

B. Mukherji

PUBLIC SERVICE ELECTRIC & GAS CO.

G. Slifer
G. Schnabel

EMPIRE STATE ELECTRIC ENERGY
RESEARCH CORP.

J. Burger

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G. Olaya
B. Byrne
D. Martin
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S. Corsanico