

CERTIFIED

MINUTES OF THE ACRS
AD HOC METAL COMPONENTS SUBGROUP MEETING CERTIFIED COPY
MAY 11-12, 1982
WASHINGTON, D. C.

DATE ISSUED: JULY 27, 1982

The ACRS Ad Hoc Metal Components Subgroup met on May 11-12, 1982 in Washington, D. C. to discuss the status of the pressurized thermal shock (PTS) problem with the NRC and industry, in response to Chairman N. J. Palladino's letter of March 25, 1982 (Attachment 1). The letter states that the ACRS should critique the the NRC short-term action plan on the PTS matter before release of the NRC action plan, currently scheduled to be released at the end of June.

The meeting was open to the public. The Federal Register meeting notice, attendee list and documents received at the meeting are shown in Attachments 2, 3, and 4, respectively.

M. Bender in his opening statements briefly reviewed the charge of the Ad Hoc Metal Components Subgroup by reviewing Palladino's letter of March 25, 1982. M. Bender briefly reviewed the PTS matter and discussed various actions that can be taken to ameliorate the PTS problem. They are as follows:

- Limit the reactor vessel pressure-temperature range.
- Increase the ECCS water temperature.
- Limit the fluence on the reactor vessel.

- Limit the reactor vessel pressure after the thermal shock transient.
- The reactor vessel could be annealed to regain its toughness after irradiation damage.

M. Bender briefly reviewed D. Basdekas' presentation to the Commission of March 4, 1982. M. Bender stated that D. Basdekas may have overstated the problem, but did it so that the PTS concern might be resolved by the NRC in a more expeditious manner. The failure of the control system and its effects on the system leading to a potential PTS problem should be thoroughly studied. At the request of D. Basdekas, his prepared statement to the Commissioners was inserted into the record.

R. Cheverton reviewed the status of overcooling accident studies performed at ORNL. Hew stated that fracture mechanics Model OCA described in the owners group report and that used by ORNL are very similar. This code is based on long axial and circumferential flaws, including the effects of cladding in the thermal resistance and stress effects for through the clad cracks, and assumes that linear elastic fracture mechanics applied. He stated that the owners group results indicate no substantial reduction in pressure vessel lifetime for the limited number of transients considered. A program at ORNL to define transients and their probabilities is currently in progress. Also, at ORNL several fracture mechanics phenomena are under study to determine the accuracy of the fracture mechanics model.

In reply to a question, R. Cheverton stated that the thermal conductivity of irradiated pressure vessel material increases by about 2% according to initial test, rather than significantly decreasing as previously assumed.

Information sent by Prof. Sih on this matter was inserted in the record. M. Bender stated that it was not germane to the Subgroup task at hand.

R. Woods, NRC Task Project Manager, presented a status report on PTS and discussed its plans for the June reassessment of this matter. In this reassessment the staff will address the following question:

"Are corrective actions needed that must be initiated before the longer-term PTS project provides generic resolution and acceptance criteria?"

The Staff's preliminary response is "yes," and its planned actions are listed below:

- Improved training programs (short-term)
- Improved procedures (short-term)
- Better instrumentation (intermediate-term)
- Low-leakage core design options (timing being considered)
- Warm RWST (timing being considered)
- Auto control system (long-term)
- Annealing (long-term)

R. Woods stated that one of the major uncertainties on the PTS matter is human response or operator actions.

E. Throm, NRC, discussed the transients relating to PTS risk. He stated that there are a large number of events which may be of concern for PTS and that these events are not necessarily the DBEs and AOs which have been studied to date. He further stated that it is not appropriate to rely on the operator as the sole source for protection against PTS.

J. Clifford, NRC, discussed human factors as they relate to the PTS matter. In the interim operator actions will be based on plant experience and simulator training. The Subgroup felt that more study in this area is needed. Additional instrumentation to follow the course of PTS may be needed so that the reactor operator can act properly.

N. Randall, NRC, discussed changing material properties due to irradiation effects. The issue here is the estimation of fracture toughness at the tip of a postulated crack as a function of temperature and neutron irradiation. Sufficient material toughness data and predictive technique exists in this area in order to perform a satisfactory fracture mechanics analysis. In reply to a question, N. Randall stated that the effects of nickel content in the material may be resolved at a specialist meeting that will be held in July 1982.

W. Hazelton, NRC, discussed beltline inspections of PWR reactor vessels. Eight plants have completed their ten-year inspections. He stated that the ASME Section XI Code defines acceptable indications up to 3/8-inch and that anything over 3/8-inch is not acceptable. However, current ISI techniques as defined in the present code cannot detect a flaw of this size. A 1/2-inch deep by 3-inch wide flaw can be detected using the current method. Regulatory Guide 1.150 attempts to resolve this matter. W. Hazelton stated that in some cases the clad surface up to about 1 inch into the thickness of the reactor vessel is electronically blanked out. This means that the condition in this blanked-out area is not inspected for cracks.

R. Gill, Duke Power, discussed the PTS matter applied to the Oconee 1 reactor vessel. LEFM results for the thermal shock analysis indicates that the effective full power years (EFPY) of the Oconee reactor vessel is about 25 for the worst case transient investigated. Oconee plans to augment operator awareness of the PTS matter through training and procedural guidance.

G. Ferree, B&W, discussed the reactor vessel inspection. He stated that the reactor vessels are inspected according to the ASME Code and Reg. Guide 1.150. Automated techniques are used. Using this technique, he stated that surface flaws "greater than 0.15-inch" can be found.

D. Peck, CE, discussed CE's PTS program. In his presentation the cooldown transient screening logic and elements of PTS were discussed. The results of the PTS evaluations indicate that Calvert Cliffs 1 has an EFPY of 21. The worst cooling transient in this case is a main steam line break. He stated that the ultimate resolution of the PTS issue relies on proper operator training and modified procedures, in addition to fluence reduction by fuel management. There is no concern for PTS on newer vessels because the copper content is low.

D. Speyer, Con Ed, discussed the categories that could cause PTS. He stated that transients could occur from secondary depressurizations, excessive feedwater addition, primary system depressurization with subsequent repressurization and steam generator tube rupture. Westinghouse is presently working on the application of statistical techniques to the study of overcooling transients, warm prestressing, and guideline modifications on pressure vessel annealing. Frequencies of initiating events were given. A matrix on the total probability of causing a potential initiation for all categories of secondary depressurization was presented. Other categories will be studied and a report documenting this work is scheduled to be completed by the end of May 1982.

J. Sheppard, Carolina Power & Light, discussed the H. B. Robinson PTS matter. Based on the material properties of the vessel and various transients examined, i.e., LOCA, steam line break, SB LOCA, small steam line break and the Rancho Seco transient, the results of linear elastic fracture mechanics

analysis indicate that H. B. Robinson has greater than 31 calendar years of remaining life (based on 80% capacity factor). He stated that PTS does not present a safety issue but has a potential for impacting plant availability and reliability. NRC has audited Robinson operator awareness and procedures in light of the PTS matter. The NRC has recommended that CP&L lower the SI termination pressure criteria from 2000 psi to SI pump shutoff head of about 1500 psi. In addition, NRC has recommended that CP&L provide clear instructions for controlling temperature/pressure following steam generator dryout. CP&L has also made changes in its fuel management scheme in order to reduce the fluence at the pressure vessel wall. Fresh fuel will be used away from the flats of the core and thrice-burned fuel will be used.

L. Lois, NRC, presented information on the pressure vessel fluence program in the area of benchmarking and calibration of computational tools and the evaluation of three representative plants with respect to fluence rate reduction and its impact. He stated that the uncertainty in the calculational tools current available is about 20%. This uncertainty is due to as-built dimensions, source and its representation and the modelling techniques used.

The three plants evaluated for fluence reduction were Oconee 1 (B&W), Ft. Calhoun (CE) and H. B. Robinson-2 (W). Two methods suggested were

low-leakage loading and fuel assembly substitution. Fluence rate reduction of up to a factor of 5 can be obtained with low-leakage loading schemes where depleted or poisoned assemblies are used in the core periphery to lower their power. The entire or selected outer row assemblies could be replaced with stainless steel dummy assemblies in order to reduce vessel fluence. A much larger fluence reduction could be obtained by assembly substitution and it could result in essentially a core redesign with severe limitations in power derating, new set points, new fuel loading, etc.

Cost considerations were accounted for in the fluence reduction evaluations. Assuming a 10% fuel replacement and 10% power derating, it is estimated that it would cost anywhere from about \$28 to \$45 Million.

R. Klecker, NRC, presented a review of the stress/fracture mechanics methodologies available to solve the PTS matter. Based on studies to date for unanticipated but more likely transients in which the final temperature does not fall below the RT_{NDT} and in recognition of conservatism in the analysis, it is concluded that the risk of vessel failure is quite low; however, to assure vessel integrity for any PTS event, it is prudent to reduce pressure monotonically and not repressurize, especially late in the event when the vessel cools down (nominally 10-30 minutes following the onset of thermal shock).

M. Vagins, NRC, discussed PTS issues in fracture mechanics being addressed by RES. Most of the work being performed is for the long-term resolution of the PTS problem. Only the tests on clad effects are categorized as short-term resolution. This test will be run using a 4-point beam bending specimen of 2 inches thick by 18 inches wide and about 60 inches in length. The specimen will be clad by 308 stainless steel material. The effects of cladding on the behavior of the pressure vessel will be studied.

J. Muscara, NRC, discussed near-surface crack detection methods. From this study he concluded that:

- Near surface defects, 6mm and greater under smooth clad, can be detected with a high degree of confidence,
- The effectiveness of crack detection through manually deposited clad is questionable and remains to be demonstrated,
- The current calibration requirements of Section XI of the Code are not adequate or sensitive for detection of flaws at the clad/base metal interface,
- It may be advisable to require that vessels that are not yet in service be ground to assure effective ISI.

At the end of the formal presentation the consensus of the group seems to indicate the following:

- The material properties and stress/fracture mechanics methodology in predicting pressure vessel integrity seems to be satisfactory.
- The events sequence leading to transients causing the PTS concern needs more work.
- Too much reliance is being placed on the operator to mitigate PTS events. Sufficient instrumentation to detect and follow PTS sequence may not be adequate.

An outline of the proposed ACRS report on the PTS matter was proposed by M. Bender and accepted by the Subgroup. M. Bender stated that he will draft the proposed ACRS report within 7-10 days for the Subgroup to comment on before the 266th (June) ACRS Meeting.

The Ad Hoc Metal Components Subgroup plans to address the PTS matter at the Full ACRS 266th Meeting.

The meeting was adjourned.

NOTE: A complete transcript of the meeting is on file at the NRC Public Document Room at 1717 H St., NW., Washington, D.C. or can be obtained from Alderson Reporters, 300 - 7th St., SW., Washington, D.C. 202-554-2345.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

CHAIRMAN

March 25, 1982

Dr. Paul G. Shewmon, Chairman
Advisory Committee on Reactor Safeguards
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Dr. Shewmon:

During the Committee's recent meeting with the Commission, and on other occasions, I have expressed interest in resolving the questions associated with pressurized thermal shock for nuclear power plants. The NRC staff has briefed the Commission on the status of their efforts. I understand that the staff is working on a proposed plan of action which will be forthcoming by about the middle of this year.

I would appreciate an ACRS critique of the staff's program on pressurized thermal shock. I am particularly interested in obtaining your views on short-term steps that should be taken by the NRC to lessen the chances of a severe problem occurring because of pressurization following thermal shock to a pressure vessel. Your critique would appear most valuable if it could be done prior to publication of the NRC plan. In that way the staff will have the advantage of knowing your views before their plan is made final.

By copy of this letter to the EDO, I am asking that NRC staff representatives and their contractors would be available to meet with the Committee or an appropriate Subcommittee to discuss this issue at a mutually convenient time.

Sincerely,

Nunzio D. Palladino
Nunzio D. Palladino

cc: Commissioner Gilinsky
Commissioner Ahearne
Commissioner Roberts
EDO
SECY
OPE
OIA

b. If an NRC inspector is to respond, such response will be within 24 hours of the notification if at all possible. No action is required of the State of Washington except to make arrangements to have the package or shipment held until the arrival of the NRC inspector.

c. If the decision is that an NRC inspector will not respond, a decision will be made during the telephone conversation whether the NRC wants to consider action on the matter. Many situations may be of minor significance and questionable importance, and neither party will wish to take any formal action.

d. If the NRC wishes to consider enforcement action on the matter, the State of Washington will supply information in writing to the NRC. The amount of information will be kept to the minimum necessary for effective enforcement action. Information will be in a mutually agreeable format and will be completed in a timely manner.

e. It is recognized that should an NRC licensee formally protest enforcement action based on information supplied by a State inspector, that State inspector could be needed to provide testimony at an NRC hearing. The NRC will fund any travel costs associated with such testimony, and will supply and necessary legal support for the State inspector.

f. The principal contact for these matters within the Region V NRC office is the Chief, Materials Radiation Protection Section, Robert D. Thomas, telephone 415-943-3700. The principal contact for these matters in the State of Washington will be Nancy P. Kirner, telephone 206-753-3459.

7. This Subagreement shall take effect immediately upon signing by the State and the Nuclear Regulatory Commission, and may be terminated upon 30 days written notice by either party.

For the State of Washington.

John A. Beare,

M.D., M.P.H., Director, Health Services Division, Department of Social and Health Services.

Dated this 8th day of January 1982 at Olympia, Washington.

For the United States Nuclear Regulatory Commission.

R. H. Engelman,

Regional Administrator, Region V.

Dated this 14th day of December 1981 at Walnut Creek, California.

For the State of Washington.

Robert Copeland,

Contracting Officer.

January 19, 1982.

[FR Doc. 82-11283 Filed 4-23-82; 8:45 am]

BILLING CODE 7590-01-M

Advisory Committee on Reactor Safeguards Subcommittee on Ad Hoc Metal Components Subgroup, Meeting
The ACRS Subcommittee on Ad Hoc

Metal Components Subgroup will hold a meeting on May 11 and 12, 1982, Room 1046, 1717 H Street, NW, Washington, DC. The Subcommittee will discuss the status of the pressurized thermal shock matter with the NRC Staff and its consultants and the industry. Notice of this meeting was published April 13.

In accordance with the procedures outlined in the Federal Register on September 30, 1981 (46 FR 47903), 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 entire meeting will be open to public attendance except for those sessions during which the Subcommittee finds it necessary to discuss proprietary information and industrial security. One or more closed sessions may be necessary to discuss such information. (SUNSHINE ACT EXEMPTION 4). To the extent practicable, these closed sessions will be held so as to minimize inconvenience to members of the public in attendance.

The agenda for subject meeting shall be as follows:

Tuesday and Wednesday, May 11 and 12, 1982—8:30 a.m. until the conclusion of business each day

During the initial portion of the meeting, the Subcommittee, along with any of its consultants who may be present, will exchange preliminary views regarding matters to be considered during the balance of the meeting.

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 Igne (telephone 202/634-1414) between 8:15 a.m. and 5:00 p.m., EST.

I have determined, in accordance with subsection 10(d) of the Federal Advisory Committee Act, that it may be necessary to close some portions of this meeting to protect proprietary information and

Industrial security. The authority for such closure is Exemption (4) to the Sunshine Act, 5 U.S.C. 552b(c)(4).

Dated: April 20, 1982.

John C. Hoyle,

Advisory Committee Management Officer.

[FR Doc. 82-11285 Filed 4-23-82; 8:45 am]

BILLING CODE 7590-01-M

SMALL BUSINESS ADMINISTRATION

[License No. 06/06-0188]

Mercantile Dallas Corp.; Application for Approval of Conflict of Interest Transaction

Notice is hereby given that Mercantile Dallas Corporation, 1704 Main Street, Dallas, Texas 75222, a Federal Licensee under the Small Business Investment Act of 1958, as amended (Act), (15 U.S.C. 661 *et seq.*), has filed an application with the Small Business Administration, pursuant to Section 312 of the Act and covered by § 107.1004(b)(1) of the Regulations governing small business investment companies (13 CFR 107.1004 (1982)), for approval of a conflict of interest transaction falling within the scope of the above Sections of the Act and Regulations.

The Licensee proposes to make a \$75,000 loan to Robert L. and Janice Lhota. Mr. Lhota is considered to be an Associate of the Licensee under Section 107(3)(h) of the Regulations as Mrs. Lhota is an employee of the Mercantile National Bank, a majority owner of the Licensee.

Notice is hereby given that any interested person may, not later than ten (10) days from the date of this notice, submit written comments on the proposed transaction to the Acting Deputy Associate Administrator for Investment, Small Business Administration, 1441 "L" Street, NW, Washington D.C. 20418.

A copy of this notice shall be published in a newspaper of general circulation in Dallas, Texas.

(Catalog of Federal Domestic Assistance Program No. 59.011, Small Business Investment Companies)

Dated: April 21, 1982.

Robert G. Lineberry,

Acting Deputy Associate Administrator for Investment.

[FR Doc. 82-11310 Filed 4-23-82; 8:45 am]

BILLING CODE 8025-01-M

Attachment 2

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS MEETING
ON
AD HOC METAL COMPONENTS SUBGROUP

MAY 11-12, 1982

ATTENDEES PLEASE SIGN BELOW

LEASE
PRINT

NAME	BADGE NO.	AFFILIATION
BRUCE KING	E-0161	WESTINGHOUSE
T. A. MEYER	E-0152	WESTINGHOUSE
VERNON T. CHILSON	E-0146	FLORIDA POWER & LIGHT CO.
ROBERT GILL	E-0244	DUKE POWER
LESTER T. PEDERSEN	E-0247	BATTELLE
Joseph De Francesco	E-0112	EBASCO Services
D. H. ...	E-...	COMBUSTION ENG. INC.
RUSS KLATT	E-0101	PACIFIC GAS & ELECTRIC
FRANKLIN T. BINFORD	E-0240	OAK RIDGE NATIONAL LAB.
T. W. Howe	E-0242	CAROLINA POWER & LIGHT CO.
S. R. Zimmerman	E-0234	Carolina Power & Light
Mary Boyd	E-0196	Duke Power Co.
Jane Beach	E-0136	Alcoa
M. BENDER		ACRS Member
H. ETHERINGTON		ACRS MEMBER
D. VIARD		ACRS MEMBER
P. SHEWMAN		ACRS MEMBER
H. KOVTS		ACRS Consultant
E. ABBOTT of NRC		CONSULTANT
T. THEOFANOUS		ACRS CONSULTANT
W. BOCK		ACRS CONSULTANT
Z. ZUDANS		ACRS CONSULTANT

**ADVISORY COMMITTEE ON REACTOR SAFEGUARDS MEETING
ON
AD HOC METAL COMPONENTS SUBGROUP**

MAY 11-12, 1982

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NAME	BADGE NO.	AFFILIATION
Michael Allison	E-0184	NORTHEAST UTILITIES
HOWARD STORR JR	E-0185	NORTHEAST UTILITIES
R. SORSUM	E-0225	BTR
WARREN M. ANDREWS	E-0175	SOUTHERN CO. SERVICES
Samuel P. Grant	E-0214	CP&L
J. J. Sheppard	E-0202	CP&L
DB WATERS	E-0192	CP&L
M O BARDEIRA	E-0126	PSE+G
W J McEneaney	E-0181	OTPPD
G. R. Irwin	E 0248	Un. of Maryland
R. J. SERED	E 0235	WESTINGHOUSE
M.D. PATRICKSON	E-0217	BALTO G & E
I. CATTON		ACRS CONSULTANT
4.		
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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS MEETING
GH

AD HOC METAL COMPONENTS SUBGROUP

MAY 11-12, 1982

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NAME	BADGE NO.	AFFILIATION
Tom Lordi	E0249	WEST Elec Corp.
B. J. Short	E-0154	B+W
A. L. Lowe Jr.	E-0111	B+W
D. V. Ferrer	E-0129	B+W
A. L. Lotts	E-0209	ORNL
R. D. CHEVERTON	E-0208	ORNL
James R. Lime	E-0193	LANL
Gordon Willcutt	E-0201	LANL
J. M. WESTRIVEN	E-0218	C-E
J. W. Pfeifer	E-0233	C-E
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MEETING ROOM: _____

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS MEETING
 ON
 AD HOC METAL COMPONENTS SUBGROUP

MAY 11-12, 1982

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NAME	BADGE NO.	AFFILIATION
W. GARY GATE	E 0151	C. P. P. D.
J K Gasper	E 0141	Omaha Public Power District
J. D. McADOO	E 0239	WESTINGHOUSE
IVAN SPRUNG	E 0211	STONE & WEBSTER
J-V. BRUNZINI	E-0234	POWER AUTHORITY OF N.Y.
J J. LEVIN Jr.	E 0132	Morgan Associates
J. K. ...	E 0229	Cong. Wash. ...
Paulotte Thumblay	E-0185	NUS
M.A. WEAVER	E-0203	Westinghouse
M. J. HITCHLER	E-0114	WESTINGHOUSE
J A RUMANCIK	F-0187	WESTINGHOUSE
D. R. SHARR	F-0231	WESTINGHOUSE
J. M. McAvoy	F-0206	Veeco
M. B. Shelton	E-0132	Veeco
John J. Herbst		COMB. ENG.
Don Peck	E-0112	C-E
J. S. M' ...	E-0190	TSI
H U ...	E-0173	Westinghouse
DAVID W. LIPPARD	E-0148	Veeco
John CAREW	E 0147	BNI
GINDII CHEXAL	E.0223	EPRI
D M S ...	E-0180	Gen Edison

TENTATIVE SCHEDULE
AD HOC METAL COMPONENTS SUBGROUP MEETING
MAY 11-12, 1982
ROOM 1046, 1717 H ST., N.W., WASHINGTON, D.C.

MAY 11, 1982

✓ 8:30 a.m. I. Chairman's Opening Statement M. Bender

8:45 a.m. II. Comments

o R. Cheverton, ORNL

9:57 am → D. Basdekas, NRC (MB summarized May 4
not presentation present time
to commission)
o Others

→ EPRI will be available on May 11-12, 1982
to answer subgroup questions.
Bink's clerical avail.

III. NRC Staff Presentation

✓ 9:45 a.m. 1. General Overview and Introduction R. Woods

o Current effort is to develop sufficient information so as to answer basic question: Corrective actions now? Criteria?

o Plant data needed

2. Transients

✓ 10:00 a.m. o What are transients with PTS risk? E. Throm

o What differences between NRC and Utilities regarding Control System function? Mixing assumption?

✓ 10:20 a.m. o What are differences in perception about Human Factors? J. Clifford

10:30-10:45 a.m. ** BREAK **

3. Vessel Condition

✓ 10:45 a.m. Material Condition N. Randall

o Initial RT_{NDT} (NRC/Industry)

o ΔRT_{NDT} - plant surveillance capsule vs. R.G. 1.99

o Updated R.G. 1.99

ATTACHMENT 4

11:05 a.m. ✓ 11:05

FluenceL. Lois

- o What is accuracy of NRC predictions?
- o What is being done to improve prediction and measurement accuracy, verify submittals?
- o Results of review of 150-day responses

11:20 a.m. ✓

Fracture Mechanics

- o What is our basis to predict vessel safety? R. Klecker, N. Randall
- o Are calculations and assumptions too conservative? R. Klecker, N. Randall
- o What proof do we have of scaling from test specimens to vessels? R. Klecker, N. Randall
- o Deterministic and Probabilistic results, sensitivities R. Klecker, N. Randall
- o What are our failure criteria? R. Klecker, N. Randall
- o Status and development/verification needed? (HSST, PTS tests, clad test and analyses) M. Vagins

11:50 a.m. ✓ 11:50

Flaws and Detection

- o Recent 10-year inspection results W. Hazelton
- o Near-surface inspection methods J. Muscara

4. Short-Term Fixes

- o What are possible actions for short term?
 - Operating training and procedures J. Clifford ✓
 - Fuel Configuration and resulting impacts L. Lois
 - ECCS supply temperature reduction E. Throm
- o Should we do something now? Why or why not? R. Woods ✓

12:10 p.m.

12:25 p.m.

12:35 p.m.

12:45 p.m.

✓ 12:00 Noon

12:05 p.m. ✓ 12:05

✓ 12:45 - 1:45 p.m.. ** LUNCH **

IV. Industry Presentation

✓ 1:45 p.m.

1. Babcock & Wilcox/Oconee

✓ 3:15 p.m.

2. Combustion Engineering/Ft. Calhoun

✓ 4:45 p.m.

3. Westinghouse/H. B. Robinson

8 OC

6:15 p.m.

V. Recess

MAY 12, 1982

8:30 a.m.

I. Chairman's Statement

8:45 a.m.

II. Carryover of Items Not Presented on May 11, 1982

10:00 a.m.

III. Open Executive Session

o Prepare a draft report in response to N. J. Palladino