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

Docket File

Docket No: 50-329/330

AUG 21 1978

Consumers Power Company
ATTN: Mr. S. H. HOWELL
Vice President
212 West Michigan Avenue
Jackson, Michigan 49201

Gentlemen:

SUBJECT: PWR STEAM GENERATOR CONFERENCE

The Division of Operating Reactors, Office of Nuclear Reactor Regulation, has organized a two-day PWR Steam Generator Conference to be held at the Holiday Inn in Bethesda, Maryland on September 7 and 8, 1978. The purpose of the conference is to provide an opportunity for industry, government, national laboratory, foreign, and possible public representatives to present and discuss operating experience relevant to steam generators and to exchange ideas for integrating design, inspection and operating procedures to ensure more reliable, safe operation of steam generators at nuclear power facilities.

Attached for your use is a Notice of the Conference and a tentative agenda.

Please notify Dr. B. D. Liaw, Division of Operating Reactors, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, telephone (301) 492-8060 of your intent regarding attendance at the conference by August 25, 1978.

Sincerely,

D. B. Vassallo

D. B. Vassallo, Assistant Director
for Light Water Reactors
Division of Project Management

Enclosures:
1. Notice of Conference
2. Tentative agenda

cc w/ enclosures:
See Page 2

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Consumers Power Company

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ENCLOSURE NO. 1

CONFERENCE NOTICE

The Nuclear Regulatory Commission will sponsor a two-day Pressurized Water Reactor Steam Generator Workshop at the Holiday Inn in Bethesda, Maryland on September 7 and 8, 1978. The purpose of the workshop is to provide an opportunity for industry, government, national laboratory and foreign organizations, and possibly, public representatives to present and discuss operating experience relevant to steam generator tube degradation and to exchange ideas for integrating design, inspection and operating procedures to ensure safe operation of steam generators at nuclear power facilities. The workshop will be comprised of presentations by invited speakers followed by a panel discussion.

Requests for additional information, including requests to participate, should be addressed to Dr. B. D. Liaw, Division of Operating Reactors, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555. Telephone (301) 492-8060.

A tentative agenda of the workshop is attached.

ENCLOSURE NO. 2

PRESSURIZED WATER REACTOR STEAM GENERATOR WORKSHOP

DIVISION OF OPERATING REACTORS

OFFICE OF NUCLEAR REACTOR REGULATION

U. S. NUCLEAR REGULATORY COMMISSION

WASHINGTON, D. C. 20555

General Chairman: Darrell G. Eisenhut, Assistant Director for Systems and Projects
Division of Operating Reactors

September 7, 1978

8:00 a.m. - Registration

INTRODUCTORY SESSION: D. G. Eisenhut

9:00 a.m. - Opening and Welcome Remarks (V. Stello)

9:10 a.m. - Licensing Bases for Continued Operation of PWR Steam Generators (D. G. Eisenhut)

9:30 a.m. - NRC Confirmatory Research Programs (C. Z. Serpan)

- Coffee Break -

GENERAL SESSION: L. C. Shao

10:00 a.m. - Westinghouse Steam Generator Operating Experiences (Representative - Westinghouse Electric Corporation)

10:30 a.m. - Combustion Engineering Steam Generator Operating Experiences (Representative - Combustion Engineering)

11:00 a.m. - B&W Steam Generator Operating Experiences (Representative - Babcock & Wilcox, Inc.)

- Lunch Break -

TECHNICAL SESSION I: J. P. Knight

1:30 p.m. - Eddy Current Inspection Method Evaluation
(Representative - Battelle Columbus)

2:00 p.m. - Advanced ECT Probe Development
(Representative - ZETEC, Inc.)

2:30 p.m. - PNL Steam Generator Tube Integrity Program
(Representative - Pacific Northwest Laboratory)

- Coffee Break -

3:30 p.m. - BNL Stress Corrosion Tests
(Representative - Brookhaven National Laboratories)

4:00 p.m. - DOE Chemical Cleaning Program
(Representative - U. S. Department of Energy)

September 8, 1978

TECHNICAL SESSION II: B. D. Liaw

9:00 a.m. - Model Boiler Test for Reproducing Tube Denting
(Representative - Combustion Engineering, Inc.)

9:30 a.m. - Improved Westinghouse Steam Generator Design to Avoid Various Forms of Tube Degradation
(Representative - Westinghouse Electric Corporation)

10:30 a.m. - Experience with Condenser Failures, Retubing and Consequence
(Representative - Westinghouse Electric Corporation)

11:00 a.m. - Turkey Point Steam Generator Replacement Program
(Representative - Bechtel Power Corporation)

- Lunch Break -

1:30 p.m. - PANEL DISCUSSIONS: D. G. Eisenhut

Panel Members: J. R. Weeks, L. Frank, J. Muscara, J. Scinto, F. Almeter, B. D. Liaw, and various industry representatives

- Need for Secondary Water Chemistry Control
- Steam Generator Tube Denting, Support Plate Cracking and Deformation
- Regulation and Regulatory Guide Interpretations - Tube Plugging Criteria, ISI Requirements
- Development ECT Inspection Techniques
- Additional Research Programs

IE Circular No. 77-06
April 5, 1977

EFFECTS OF HYDRAULIC FLUID ON ELECTRICAL CABLES

DESCRIPTION OF CIRCUMSTANCES:

Commonwealth Edison Company, by letter to the NRC dated April 1, 1976, (copy enclosed), described the circumstances under which fire resistant hydraulic fluid had a deleterious effect on the insulation and jacketing of electrical cables. While the solvent characteristics of phosphate-ester fire resistant fluids are well documented in literature, it appears that this information may not be generally available to nuclear power plant operating staffs. Our evaluation of this occurrence emphasizes the importance of:

1. Reviewing design and operating procedures for systems containing synthetic hydraulic fluids and other potentially aggressive fluids to minimize the probability of leakage, overflow or inadvertant spill of fluid.

2. Reviewing housekeeping practices to assure that they provide for prompt cleanup of spills or leakage of any type of fluid.

Enclosure:
Letter from Commonwealth Edison Co.
to J. Keppler, Director, Region III
dtd. 4/1/76

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The next course of action was to determine the types of cable in the Unit 2 cable tunnel that were affected by the EHC fluid. The types of cable construction were categorized as follows:

1. Control & Power (low voltage): Individual or multiconductor PVC jacketed; mylar wrapped, PVC over butyl rubber insulated conductors.

2. Instrumentation: PVC jacketed, shielded, mylar wrapped, polyethylene insulated conductors.

3. Instrumentation: Single and multiconductor PVC jacketed, polyethylene insulated, mylar wrapped and shielded twisted pairs.

4. Instrumentation: PVC jacketed, polyethylene insulated, coaxial cable.

The control and power cables comprised approximately 80% of all cables in the Unit 2 cable tunnel. Close inspection revealed that the EHC fluid had not permeated through the PVC overall jacket. Since butyl rubber is not affected by EHC fluid, it was recommended that these cables be cleaned and left in place after the cable pans were cleaned out.

The instrumentation cables as described above in cases 2 and 3 revealed that some saturation through the overall PVC jacketing resulted. However, in no cases had the EHC fluid permeated through the mylar shielding covering. It was recommended that the plasticized sections of jacketing be removed and a suitable jacketing tape be applied.

Case 4 as described above, consisted of coaxial nuclear instrumentation cables. The coaxial cables' overall jacketing is very thin and consequently suffered greatly from the effects of plasticization. Plasticization had exposed the shielding conductor, such that possible electrical interference could result. The coaxial cables' functions were as follows:

1. Local Power Range Monitoring (LPRM)

2. Intermediate Range Monitoring (IRM)

3. Source Range Monitoring (SRM)

Since there were only 90 coaxial cables affected by the EHC fluid, it was recommended to splice in new coaxial cable sections and not tape over the shielding. Splicing in this case was considered more acceptable than taping. All coaxial cables were identified and labeled before splicing was permitted. The coaxial cables were tested against acceptable electrical properties after being spliced.

Figure 1 shows the approximate locations where EHC fluid accumulated. Figure 2 illustrates the postulated path of EHC fluid migration from the EHC fluid reservoir to the Unit 2 cable tunnel area. The accumulation of EHC fluid around the EHC fluid reservoir foundation and subsequent migration between the finish floor and rough slab, via small cracks in the concrete, is the postulated cause of the EHC fluid problem.