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UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II

101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

NOV 27 1980

In Reply Refer To:

RII:JPO

50-438, 50-439, 50-259

50-260, 50-296, 50-518

50-519, 50-520, 50-521

50-553, 50-554, 50-327

50-328, 50-390, 50-391

50-566, 50-567

Tennessee Valley Authority

ATTN: H. G. Parris

Manager of Power

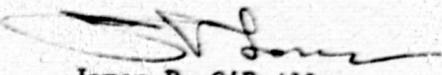
500A Chestnut Street Tower II

Chattanooga, TN 37401

Gentlemen:

The enclosed Information Notice is provided as an early notification of a possibly significant matter. Recipients of this Notice should review the information for possible applicability to their facilities. However, no specific action or response is requested at this time. If further NRC evaluations so indicate, an IE Circular or Bulletin will be issued to recommend or request specific licensee actions. If you have questions regarding this matter, please contact the Director of the appropriate NRC Regional Office.

Sincerely,


James P. O'Reilly
Director

Enclosures:

1. IE Information Notice No. 80-42
2. List of Recently issued
IE Information Notices

cc w/encl:

A. M. Qualls, Plant Superintendent
W. R. Dahnke, Project Manager
J. F. Cox, Supervisor, Nuclear
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D. L. Terrill, Project Engineer
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W. P. Kelleghan, Project Manager
G. G. Stack, Project Manager
J. M. Ballentine, Plant Superintendent
M. J. Burzynski, Project Engineer
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J. E. Wilkins, Project Manager
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

SSINS No.: 6835
Accession No.:
8008220261
IN 80-42

Dupe

November 24, 1980

IE Information Notice No. 80-42: EFFECT OF RADIATION ON HYDRAULIC SWABBER FLUID

Description of Circumstances:

On August 7, 1980, Florida Power Corporation (FPC) filed a report in accordance with 10 CFR Part 21 that identified an upper service limit of 10 Mrad (megarad) of radiation on the General Electric Versilube F-50 fluid that was provided in Anker-Holth shock suppressors mounted on the reactor coolant pumps.

This upper limit was obtained from the results of a study performed for FPC by Rensselaer Polytechnic Institute (RPI). These results contained two items of prime importance to the operation of the suppressors. The first result was a significant increase of the viscosity of the fluid to the extent that incipient gelation of the fluid occurred at exposures of approximately 50 Mrad. The viscosity increased linearly for exposures up to 20 Mrad and then increased exponentially for exposures greater than 20 Mrad. The second result showed that hydrochloric acid (HCl) was formed in significant quantities when the fluid was subjected to radiation. The following table lists the dose irradiation time and HCl formed.

Dose (Mrad)	Irradiation Time	HCl Formed (ppm)
0		
1.2	1 minute	2.78
5.8	5 minutes	70.3
5.8	10 hours	329.
18.5	11.2 minutes	335.
50.3	15.2 minutes	555
		1592

One of the recommendations by the RPI personnel was that the fluid be replaced before a limit of approximately 6 Mrads was reached. FPC reported that the fluid in service at Crystal River No. 3 plant had absorbed doses ranging from 2.3 to 3.6 Mrads, these values were determined by comparing the viscosity of the fluid in service to that of the test samples at RPI. The Technical Instruction Manual that is provided by the vendor for these suppressors contains a recommendation that 12.5 Mrads should be the maximum service life for Versilube F-50.

This IE Information Notice is provided as an early notification of a possibly significant matter that is still under review by the NRC staff. Recipients should review the information for possible applicability to their facilities. No specific action or response is requested at this time. If NRC evaluations so indicate, further licensee actions may be requested or required.

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No written response to this IE Information Notice is required. If you have any questions regarding this matter, please contact the Director of the appropriate NRC Regional Office.

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RECENTLY ISSUED
IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
80-42	Effect of Radiation on Hydraulic Snubber Fluid	11/24/80	All nuclear power reactor facilities with an OL or CP
80-41	Failure to Swing Check Valve in the Decay Heat Removal System at Davie-Besse Unit No. 1	11/10/80	All nuclear power reactor facilities with an OL or CP
80-40	Failure Of Swing Check Valve In The Decay Heat Removal System At Davis-Besse Unit No. 1	11/10/80	All power facilities with and OL or CP
80-39	Malfunctions Of Solenoid Valves Manufactured By Valcor Engineering Corporation	10/31/80	All light water reactor facilities holding power reactor OLs or CPs
80-38	Cracking In Charging Pump Casing Cladding	10/30/80	All PWR facilities with an OL or CP
80-37	Containment cooler leaks and reactor cavity flooding at Indian Point Unit 2	10/24/80	All nuclear power facilities holding power reactor OLs or CPs
80-36	Failure of Steam Generator Support Bolting	10/10/80	All nuclear power reactor facilities holding power reactor OLs or CPs
80-35	Leaking and dislodged Iodine-124 implant seeds	10/10/80	All categories G and G1 medical licensees
80-34	Boron dilution of reactor coolant during steam generator decontamination	9/26/80	All pressurized water reactor facilities holding power reactor OLs
80-33	Determination of teletherapy timer accuracy	9/15/80	All teletherapy (G3) licensees
80-32	Clarification of certain requirements for Exclusive-use shipments of radioactive materials	8/12/80	All NRC and agreement state licensees
80-31	Maloperation of Gould-Brown Boveri Type 480 volt type K-600S and K-DON 600S circuit breakers	8/27/80	All light water reactor facilities holding OLs or CPs