UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

November 24, 1980

Those on Attached Address List:

The enclosed IE Information Notice No. 80-42 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 this office.

Sincerely,

Glen W. Roy
for James G. Keppler
Director

Enclosure: IE Information
Notice No. 80-42

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TIC

Docket No. 50-440
Docket No. 50-441

The Cleveland Electric Illuminating
Company
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Cleveland, OH 4 101

cc w/encl:
Central Files
AD/Licensing
AD/Operating Reactors
PDR
Local PDR
NSIC
TIC
Harold W. Kohn, Power
Siting Commission
Daniel D. Wilt, Attorney
Helen Evans, State of Ohio

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

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON,D.C. 20555

Dupe

November 24, 1980

IE Information Notice No. 80-42: EFFECT OF RADIATION ON HYDRAULIC SNUBBER 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		2.78
1.2	1 minute	70.3
5.8	5 minutes	329.
5.8	10 hours	335.
18.5	11.2 minutes	555
50.3	15.2 minutes	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.

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.

RECENTLY ISSUED
IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
80-41	Failure of Swing Chcek Valve in the Decay Heat Removal System at David-Besse Unit No. 1	11/10/80	All 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

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