

March 12, 1981



MEMORANDUM FOR: B. H. Grier, Director, Region I  
J. P. O'Reilly, Director, Region II  
J. G. Keppler, Director, Region III  
K. V. Seyfrit, Director, Region IV  
R. H. Engelken, Director, Region V

FROM: James H. Sniezek, Director, Division of Resident and Regional  
Reactor Inspection, IE

SUBJECT: IE INFORMATION NOTICE NO. 81-07: POTENTIAL PROBLEM WITH  
WATER-SOLUBLE PURGE DAM MATERIALS USED DURING INERT GAS  
WELDING

The subject information notice is transmitted for issuance March 16, 1981. The information notice should be issued to all nuclear power reactor facilities holding power reactor Operating Licenses or Construction Permits. Also enclosed is a draft copy of the transmittal letter for this purpose.

JS

James H. Sniezek, Director  
Division of Resident and  
Regional Reactor Inspection, IE

Enclosures:

1. Draft transmittal letter
2. IE Information Notice 81-07

CONTACT: G. B. Georgiev, IE  
49-27551

WPU:JD RRRI:IE  
3/12/81 GBGeorgiev  
INFOR4(M) 3/ /81

RRRI:IE  
RWWoodruff  
3/ /81

DD:RRRI:IE  
ELJordan  
3/ /81

D:RRRI:IE  
JHSniezek  
3/ /81

8104020938

(Draft letter to all nuclear power reactor facilities holding an Operating License or Construction Permit)

IE Information Notice No. 81-07: POTENTIAL PROBLEM WITH WATER-SOLUBLE PURGE  
DAM MATERIALS USED DURING INERT GAS WELDING

Addressee:

This information notice is provided as an early notification of a possibly significant matter. It is expected that recipients will review the information for possible applicability to their facilities. 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,

Signature  
(Regional Director)

Enclosures:  
IE Information Notice No. 81-07

SSINS No.: 6835  
Accession No.:  
8011040267  
IN 81-07

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

March 16, 1981

IE Information Notice No. 81-07: POTENTIAL PROBLEM WITH WATER-SOLUBLE PURGE  
DAM MATERIALS USED DURING INERT GAS WELDING

Description of Circumstances:

Recent experiences with water-soluble purge dam materials at several nuclear construction sites have shown the need to develop welding procedures that address the potential for thermally decomposing the purge dam material during inert gas welding or post-weld heat treatment operations. Specifically, polyvinyl alcohol film manufactured by Chris-Craft Industries was the purge dam material used at these construction sites. The decomposition of this purge dam material at elevated temperatures causes the material to lose its solubility in water. As a result, the purge dam material cannot be completely dissolved during subsequent piping system flushing and cleaning operations. The failure of this material to completely dissolve could cause significant problems during reactor plant operation.

Specimens of polyvinyl alcohol film were recently obtained from the Mono-Sol Division of Chris-Craft Industries and tested at Franklin Research Center (FRC) to determine, among other things, the threshold temperature at which the material becomes insoluble in water. The results of this test program indicate that (1) the solubility of the purge dam material in water rapidly approaches zero if the material is heated and held at temperatures in excess of 300°F; (2) the purge dam material hardens and becomes difficult to break if subject to temperatures in the range of 300°F to 400°F, and becomes brittle if heated to 450°F; and (3) purge dam material heated above its threshold temperature is not soluble in commonly used laboratory solvents. The independent testing laboratory (FRC) therefore concludes that the Mono-Sol polyvinyl alcohol film will not dissolve during aqueous flushing of the system if the material has been heated to temperatures in excess of 300°F.

Recommended Actions for Holders of Operating Licenses and Construction Permits:

It is recommended that all welding operations involving polyvinyl alcohol purge dam materials be governed by procedures that require the material to be located in areas that are sufficiently removed from heat so that the temperature of the material does not reach 300°F.

No written response to this information notice is required. If you require additional information with regard to this subject, please contact the appropriate NRC Regional Office.

Attachment:  
Recently issued IE Information Notices

RECENTLY ISSUED  
IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
81-06	Failure of ITE Model K-600 Circuit Breaker	3/11/81	All power reactor facilities with an OL or CP
81-05	Degraded DC System at Palisades	3/13/81	All power reactor facilities with an OL or CP
81-04	Cracking in Main Steam Lines	2/27/81	All power reactor facilities with an OL
81-03	Checklist for Licensees Making Notifications of Significant Events in Accordance with 10 CFR 50.72	2/12/81	All power reactor facilities with an OL
81-02	Transportation of Radiography Devices	1/23/81	All Radiography licensees
81-01	Possible Failures of General Electric Type HFA Relays	1/16/81	All power reactor facilities with an OL or CP.
80-45	Potential Failure of BWR Backup Manual Scram Capability	12/17/80	All PWR facilities with an OL or CP
80-44	Actuation of ECCS in the Recirculation Mode While in Hot Shutdown	12/16/80	All PWR facilities with an OL or CP
80-43	Failures of the Continuous Water Level Monitor for the Scram Discharge Volume at Dresden Unit No. 2	12/5/80	All power reactor facilities with an OL or CP
80-42	Effect of Radiation on Hydraulic Snubber Fluid	11/24/80	All power reactor facilities with an OL or CP

OL = Operating Licenses  
CP = Construction Permits