



ARKANSAS POWER & LIGHT COMPANY

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June 12, 1985

2CAN068503

Director of Nuclear Reactor Regulation
ATTN: Mr. James R. Miller, Chief
Operating Reactors Branch #3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
Report on ANO-2 Ion-Exchange Resins

Gentlemen:

The purpose of this letter is to provide NRC with the enclosed report which describes the chemical characterization studies of the organic ion-exchange resins following an exothermic reaction event at Arkansas Nuclear One - Unit Two (ANO-2) on January 15, 1983.

Following the discovery of evidence of an exothermic reaction in a high integrity container of ANO-2 ion-exchange resin, a contract was established between Arkansas Power & Light Company (AP&L) and Battelle-Pacific Northwest Laboratories (BPNL) to perform a study to identify the cause of the exothermic reaction in the resin. Initial results did not reveal any unequivocal cause for the exothermic reaction.

Follow-up studies by BPNL were then authorized by AP&L in an effort to develop further information. The enclosed report consolidates and summarizes information developed to date on our total study efforts. Specific areas of study by BPNL for this overall effort included:

- (1) Extensive analytical analyses to determine the cations and anions present in the resin samples;
- (2) A determination of whether oxidants, reductants, acids or bases were present in the resin samples;
- (3) Determination of "free" organics;

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June 12, 1985

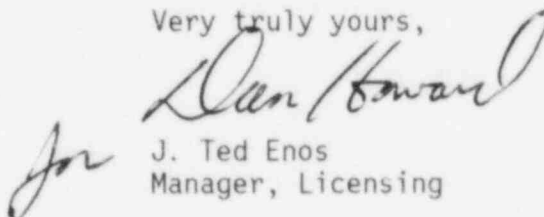
- (4) An evaluation of the thermal stability of the resins;
- (5) An evaluation of the solidification of resins and cement;
- (6) An evaluation of the microorganism growth in resins;
- (7) An evaluation of the simulated dewatering tests; and
- (8) Thermodynamic evaluation of resin stability.

The results of the above studies are included in the enclosed May 1985 Final Report prepared by Batelle Pacific Northwest Laboratories entitled "Chemical Characterization of Organic Ion-Exchange Resins Supplied by Arkansas Power and Light Company." Although air oxidation is believed to have been the cause of the exothermic event, no definitive cause was determined. However, the studies noted the significance of microorganism growth in the resins as being a possible contributing factor to the exothermic event.

AP&L wishes to note that we presently monitor the resin-bed temperature during the dewatering process and are working with our vendor to establish contingency procedures for ANO in the event the temperature exceeds a predetermined level. This is consistent with recommendations made in the report.

Due to the proprietary nature of the solidification worksheet in Appendix B and the solidification procedure in Appendix C, we request that Appendices B and C be withheld from public disclosure in accordance with the provisions of 10CFR2.790. The reasons for the proprietary classification of these appendices are delineated in the enclosed affidavit. To accommodate this request, a proprietary and a non-proprietary version of the report are enclosed for your review and use as appropriate.

Very truly yours,


J. Ted Enos
Manager, Licensing

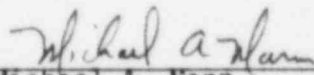
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AFFIDAVIT
SUBMITTED TO NUCLEAR REGULATORY COMMISSION
CONCERNING CONFIDENTIAL INFORMATION AND TRADE SECRETS
CONTAINED IN ARKANSAS POWER & LIGHT'S REPORT
"CHEMICAL CHARACTERIZATION OF ORGANIC ION EXCHANGE RESIN
SUPPLIED BY ARKANSAS POWER AND LIGHT"

STATE OF SOUTH CAROLINA)
)
COUNTY OF RICHLAND) ss:

Michael A. Mann states as follows on behalf of Chem-Nuclear Systems, Inc.:

1. I am Vice President and General Counsel for Chem-Nuclear Systems, Inc.
2. I am familiar with the contents of Appendices B and C of "Chemical Characterization of Organic Ion Exchange Resin supplied by Arkansas Power and Light".
3. Chem-Nuclear Systems, Inc. provided to Arkansas Power & Light a copy of its Mobile Cement Solidification System Operating Procedures. The copy was provided under the terms of a contract requiring that proprietary information provided to Arkansas Power & Light was to be held in confidence and not disclosed to third parties without permission of Chem-Nuclear. Permission was given to Arkansas Power & Light to disclose the procedure in confidence to Battelle Pacific Northwest Laboratories which was under contract to develop a specific solidification formula for Arkansas Power based on the Chem-Nuclear scheme. The Battelle effort resulted in, among other things, a completed CNSI Solidification Worksheet I, Process Control Program of Particulate Waste (Appendix B) showing ratios of constituents which ratios are a specific application of the Chem-Nuclear proprietary technology and the Battelle Northwest Laboratory Procedure for Solidification of Ion Exchange Resin (Appendix C) which, as its own terms admit, is based on CNSI Procedure SD-OP-003.
4. The contents of Appendices B and C, then, contain proprietary information derived directly from Chem-Nuclear Systems' proprietary procedures. All information was derived under agreements of confidential proprietary procedures. All information was derived under agreements of confidentiality to protect the proprietary nature of that information. The basis for holding the original information proprietary are set forth in the Affidavit submitted with "CNSI Mobile Cement Solidification System Topical Report CNSI-2" which was accepted by the U.S. Nuclear Regulatory Commission and which is incorporated herein by reference.



Michael A. Mann
Vice President & General Counsel

STATE OF SOUTH CAROLINA)
)
COUNTY OF RICHLAND) ss:

On this 10 day of June, 1985, before me, a Notary Public in and for The State of South Carolina, duly commissioned and sworn, personally appeared Michael A. Mann, to me known to be the Vice President and General Counsel for Chem-Nuclear Systems, Inc. and on oath stated that he was authorized to make this affidavit on behalf of the corporation.

IN WITNESS WHEREOF, I have set my hand and affixed my official seal the day and year first above written.

JoDee Belch
My Commission Expires: 2/22/93

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