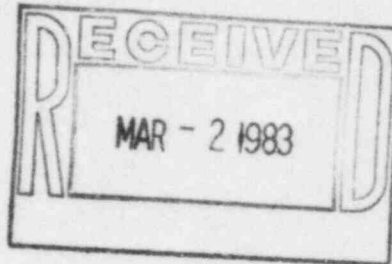




ARKANSAS POWER & LIGHT COMPANY

POST OFFICE BOX 551 LITTLE ROCK, ARKANSAS 72203 (501) 371-4000

February 25, 1983



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Mr. W. C. Seidle, Chief
Reactor Project Branch #2
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

SUBJECT: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
Data on Resins Involved in the
High Integrity Container (HIC)
Exothermic Reaction

Gentlemen:

The following information is provided in response to your telecopy request dated February 4, 1983, and titled "Data Needed on Resins." We have repeated each request and provided a response for each item.

I.A,B,C - Resin manufacturer, type and form

The affected resin was manufactured by either Rohm-Haas, IRN 150 LC, 50/50 mixture; or Diamond Shamrock ARA 9371 Anion, ARA 9358 Cation, typically a 50/50 mixture.

I.D - Resin quantity

The quantity of resin contained in the High Integrity Container (HIC) was 103 cubic feet.

I.E. - Resin age, exposure to temperature and radiation

It is difficult to determine the precise age of the resin; however, it is felt that some resin may have been as much as 3-4 years old.

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The temperature of resin during the exothermic reaction was determined to be approximately 365°F along the center line of the HIC. Radiation levels were found to be about 400 mr/hr at the top opening of the HIC.

I.F. - Physical condition of the resins beads

Resin samples taken near the center line of the HIC were found to be quite dark (shiny black) in appearance, while those resin beads away from the center line showed less darkening and normal coloration.

II.A - Service use of the resin bed materials

The resins in question were used for a variety of purposes. The resins had been transferred to the HIC from the ANO-2 Resin Storage Tank (2T-13) which serves as a holding tank for spent resins from several ANO-2 radwaste systems. Therefore, it is difficult to state specifically the service use of the resins.

II.B - Inlet stream chemistry/periodic sampling

Waste inlet streams are sampled periodically with the frequency dependent upon operational considerations. Since the resin came from a holding tank, the inlet stream chemistry is dependent on a number of inputs.

II.C - Unusual operating conditions. Past experience with similar resins. Incidents with nitrates and other oxidizing chemicals.

Similar resins have been routinely transferred from tank 2T-13 to HIC's with no problems having been experienced.

During ANO-2 service water chemical cleaning in November 1982, a cleaning system hose leak occurred which resulted in spillage of a quantity of water containing sodium nitrite (used as a passivation agent in the cleaning process). It is presumed a small portion of this leakage was routed to and processed by the ANO-2 Radwaste System.

II.D - Changes in resin parameters with time

Unknown.

II.E - Resin sluicing procedures

Resin transfer was accomplished using a resin-water slurry in accordance with approved procedures. These standard procedures are routinely used and no problems have been experienced with previous resin transfers. Information copies of these procedures are attached.

III.A,B - HIC type, size, material, and vendor

The high integrity container used was a Chem-Nuclear type 8-120. Details of its size and material of construction are proprietary and cannot be released without authorization from Chem-Nuclear. Should you still need this information, we will pursue a release from Chem-Nuclear.

III.C - Resin dewatering procedures

Resin was dewatered in accordance with Chem-Nuclear approved dewatering procedures. These procedures are proprietary and cannot be released without authorization from Chem-Nuclear. Should you still need these procedures, we will pursue a release from Chem-Nuclear.

III.D - Interaction between the HIC and the waste

There has been no apparent interaction between the resin and the HIC.

III.E - Effect of the exothermic reaction on the HIC

There is no apparent damage to the HIC or internal dewatering system; however, Chem-Nuclear intends to confirm this through destructive testing.

IV.A - Assay results and chemistry analysis results of testing

None to report at this time. AP&L expects to receive results of tests it has contracted for about March 1, 1983.

IV.B - Tests to be performed and by whom

AP&L has contracted with Battelle Northwest Laboratories (BNL) to perform the following tests:

- 1) Analysis of resins for oxidizing agents
- 2) Analysis of resins for "Free Organics"
- 3) Acid-Base titration of resin
- 4) Heat-Chemical reactions
- 5) Cation analysis
- 6) Analysis of resins for peroxides
- 7) Resin identification

IV.C - Status of Chem-Nuclear and Dow Chemical testing efforts

Chem-Nuclear and Dow have not performed any chemical analysis at this time that we are aware of. The only action known to us is that AP&L contracted with Chem-Nuclear to transport twelve samples of the affected resin to BNL on February 9, 1983.

IV.D - Sample availability for independent NRC testing

Samples of resin are available to the NRC at ANO until arrangements for final disposal are made.

V.A - Quality assurance of the HIC to assure safe transportation

Resins which have experienced an exothermic reaction will be transferred to another container for final transport and disposal. At this time it appears the HIC had no bearing on the exothermic reaction and further it appears that no damage has occurred to the HIC.

February 25, 1983

V.B - Routine storage of HIC's. Shipment of resins in the involved liner.

HIC's are normally stored for a period of 30 days or less inside a shield cask and away from direct sunlight.

The resins in question will not be shipped in the same liner. Chem-Nuclear has requested that the affected HIC be returned to Chem-Nuclear for destructive testing.

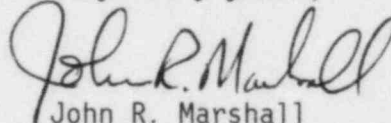
V.C - Past experience with resins from the same source

No previous problems have occurred.

V.D - Solidification procedure for resin disposal

Preparation for disposal will be based on results from chemical analysis and recommendations from vendors. Therefore, the disposal procedures are not known at this time.

Very truly yours,

A handwritten signature in dark ink, appearing to read "John R. Marshall". The signature is fluid and cursive, with the first name "John" being the most prominent.

John R. Marshall
Manager, Licensing

JRM:RR:s1