ARKANSAS POWER & LIGHT COMPANY
POST OFFICE BOX 551 LITTLE ROCK, ARKANSAS 72203 (501) 371-4000
April 15, 1986

2CAN048607

Mr. George W. Knighton, Director
PWR Project Directorate No. 7
Division of PWR Licensing - B
U. S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
ANO-2 ICC Monitoring System Final Design
Description, NUREG-0737, Item II.F.2

Dear Mr. Knighton:

Our March 18, 1986 letter (2CAN038607) committed to providing the Final Design Description for the ANO-2 ICC Monitoring System in order to complete the documentation requirements of NUREG-0737, Item II.F.2. Attached is the subject document.

The ANO-2 ICC Monitoring system consists of:

- Subcooling Margin Monitor (SMM);
- Core Exit Thermocouples (CETs); and
- Reactor Vessel Level Monitoring System (RVLMS)

The qualified SMM for ANO-2 is presently installed and operational. The details of the system were provided in our letter dated January 18, 1980 (0CAN018022).

ANO-2 has 42 CETs (21 for each channel of the ICC Monitoring System) which are considered an integral part of the ICC Monitoring System. The signals from the CETs are inputs to the Safety Parameters Display System (SPDS) in the control room. The displayed temperature range is 0°-2300°F.

As stated in our March 18, 1986 letter (2CAN038607), a qualification program for the in-containment cabling and connectors for the CETs is underway. Based on the fact that the cabling and connectors passed previous testing, we have a high degree of confidence that their qualification can be demonstrated. However, if qualification of existing cabling and connectors cannot be demonstrated, the earliest opportunity for replacement with

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qualified components will be the ANO-2 sixth refueling outage (2R6) which is currently scheduled for February through April, 1988. In the interim, the qualified SMM and RVLMS will be available.

The RVLMS consists of two redundant Radcal Level Instruments (RLIs) (each containing fourteen Radcal Gamma Thermometer (RGT) sensors to detect reactor coolant inventory above the core and reactor coolant temperature at the core exit and the vessel head), a Data Acquisition System (DAS) and primary and secondary display devices.

The RLIs presently installed in ANO-2 extend from the top of the reactor vessel to the bottom of the core. However, for ICC monitoring, only the portions of the RLIs above the core (from the top of the reactor vessel to the absolute thermocouples located at the core exit) are considered part of the ICC Monitoring System. The above-core portions of the RLIs will be used to monitor the approach to and recovery from ICC conditions. CETs will be utilized to estimate core uncovery (fuel rod cladding temperature) when reactor coolant level drops below the top of the core.

AP&L intends to use the in-core portions of the RLIs for core heat-transfer trending, ΔT measurement across the core and local fuel power measurement.

We are including proprietary and non-proprietary versions of the ANO-2 ICC Monitoring System Final Design Description. Pursuant to 10CFR2.790 we request that the proprietary version be withheld from public disclosure. The reasons for the proprietary classification of this report are delineated in the enclosed affidavit.

Very truly yours,

J. T. Enos

J. Ted Enos, Manager
Nuclear Engineering and Licensing

JTE/MJS/sg

Enclosure

AFFIDAVIT
SUBMITTED TO NUCLEAR REGULATORY COMMISSION
CONCERNING PROPRIETARY INFORMATION AND TRADE SECRETS
CONTAINED IN ARKANSAS POWER & LIGHT COMPANY REPORT
ENTITLED "ARKANSAS NUCLEAR ONE - UNIT 2
INADEQUATE CORE COOLING (ICC) MONITORING SYSTEM
FINAL DESIGN DESCRIPTION"

STATE OF ARKANSAS)
) ss:
COUNTY OF PULASKI)

Marshall L. Pendergrass states as follows on behalf of Arkansas Power & Light Company:

1. I am Vice President, Engineering for Arkansas Power & Light Company.

2. I am familiar with the contents of the enclosed document entitled "Arkansas Nuclear One - Unit 2 Inadequate Core Cooling (ICC) Monitoring System Final Design Description."

3. Arkansas Power & Light (AP&L) Company in June, 1983 entered into a contract with Technology for Energy Corporation (TEC) to supply an Inadequate Core Cooling (ICC) Monitoring System for Arkansas Nuclear One. Since that time, AP&L and TEC have designed and conducted an extensive experimental test program to verify ICC capability and to provide licensing support and design data for the system hardware.

   This design and testing program required substantial financial investment by the above parties. The disclosure of the details and/or results of these tests could cause substantial harm to the competitive position of the parties since it is feasible that similar systems may be purchased by other utilities seeking to modify their ICC program. Under an agreement between AP&L and TEC, such a purchase would be financially beneficial to both.

4. Therefore, the contents of the enclosed report includes information considered to be proprietary in accordance with the guidelines established in 10CFR2.790.

M L Pendergrass

Marshall L. Pendergrass
Vice President, Engineering

STATE OF ARKANSAS)
) ss:
COUNTY OF PULASKI)

On this 16th day of April, 1986, before me, a Notary Public in and for The State of Arkansas, duly commissioned and sworn, personally appeared Marshall L. Pendergrass, to me known to be Vice President, Engineering for Arkansas Power & Light Company 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.

Shirley Hunter

My Commission Expires: 3-1-91