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December 6, 1979

Director of Nuclear Reactor Regulation U. S. Nuclear Regulatory Commission Washington, D. C. 20555

Attention: Mr. Olan D. Parr, Chief Light Water Reactors Branch 3 Division of Project Management

Gentlemen:

SECONDARY WATER CHEMISTRY CONTROL PROGRAM NO. 2 UNIT SALEM NUCLEAR GENERATING STATION DOCKET NO. 50-311

We are in receipt of your letter of July 31, 1979, requesting submittal of our proposed Secondary Water Chemistry Control Program, which is to be referenced in a condition to the Salem 2 operating licensing, and will replace any proposed technical specifications on secondary water chemistry. In response to your request, our proposed Secondary Water Chemistry Control Program is hereby submitted as an attachment to this letter.

Should you have any questions in this regard, please do not hesitate to contact us.

Very truly yours,

R. L. Mittl General Manager -Licensing and Environment Engineering and Construction



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Attachment

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PROPOSED SECONDARY WATER CHEMISTRY CONTROL PROGRAM NO. 2 UNIT SALEM NUCLEAR GENERATING STATION

The Secondary Water Chemistry Control Program is designed to limit the corrosion of the tubing and internals of the steam generators. The basis of the program is to control the levels of the critical parameters in the steam generator bulk water such that maximum protection to the steam generators will be provided and tube integrity will be maintained.

This is accomplished by maintaining the water quality of the condensate polishing effluent and adjusting the blowdown on each of the four steam generators. The feedwater and steam generator bulk water treatment consists of introducing ammonia for pH control and hydrazine for oxygen scavenging. This treatment is recommended by the Westinghouse Electric Corporation.

CRITICAL PARAMETERS

The critical parameters measured in each of the four steam generator blowdown samples include: pH, cation conductivity, chloride and free hydroxide. The critical parameters measured in the condensate polishing effluent include: cation conductivity and sodium.

CONTROL POINTS

Normal limits of control are identified in Table 1.

SAMPLING SCHEDULE

The sampling schedule selected to maintain the critical parameters within the normal limits of control as indicated on Table 1 consists of obtaining and analyzing blowdown samples from each of the steam generators, four times in each seven day period, with no more than 72 hours between samples. The sample frequency will be increased when the normal limits of control are exceeded to assure that the Unit is operated within the limiting specifications as indicated on Table 2.

MEASUREMENT METHODS

The critical parameters are measured as follows:

Meters - pH, cation conductivity, sodium

Titrations - chlorides and free hydroxides

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SAMPLING LOCATION

Periodic samples are obtained as indicated in the sampling schedule from each of the four steam generators as well as the condensate polishing effluent.

DATA MANAGEMENT

The steam generator analysis is recorded on the daily reading sheet. The Technical Supervisor in charge of the Secondary Water Chemistry Control Program has the specific responsibility to direct the program. The data is reviewed by the Senior Performance Supervisor in charge of Chemistry as well as the Station Performance Engineer. Periodically, the data is reviewed by the General Office of the Electric Production Department as well as the Westinghouse Electric Corporation. The daily reading sheets are incorporated into the permanent Station records.

CORRECTIVE ACTIONS

Whenever the normal limits of control are exceeded, the Senior Performance Supervisor in charge of Chemistry and the Station Performance Engineer will review the data and initiate the necessary corrective actions to return the Secondary Water Chemistry to within the normal control limits as quickly as possible.

The off-control point chemistry must be returned to within the normal limits of control in the times specified in the limiting specifications contained in Table 2. In the event that the limiting specifications cannot be maintained, the data will be reviewed by the Station Manager who will initiate additional corrective actions which can include removing the Unit from service if conditions warrant this course of action.

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TABLE 1

SALEM NUCLEAR GENERATING STATION SECONDARY WATER CHEMISTRY NORMAL LIMITS OF CONTROL

Water Sample Location	Cation Conductivity MHOS/CM_at_25°C	pH at 25°C	Sodium PPB	Chloride PPM	Free Hydroxide PPM
Condensate Polishing Effluent	<u><</u> 0.1	N/A	<u><</u> 1.0	N/A	N/A
Steam Generator Blowdown	<u><</u> 2.0	8.5-9.2	N/A	<u><</u> 0.15	<u><</u> 0.15

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TABLE 2

SALEM NUCLEAR GENERATING STATION SECONDARY WATER CHEMISTRY LIMITING SPECIFICATIONS

		Period to Return	to within Normal	Limits of Control
Water Sample Location	Control Parameter	14 days	72 hours	Immediate
Condensate Polishing Effluent	Cation Conductivity, MHOS/CM at 25°C	N/A	N/A	N/A
	Sodium, PPB	N/A	N/A	N/A
Steam Generator	Cation Conductivity, MHOS/CM at 25°C	> 2.0 but <u><</u> 120	N/A	> 120
	pH at 25°C	8.0 - 9.4	N/A	< 8.0 or > 9.4
	Chloride, PPM	N/A	> 0.15 but < 1.0	> 1.0
	Free Hydroxide, PPM	N/A	> 0.15 but < 1.0	<u>></u> 1.0

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