

*Central File*  
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VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

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November 1, 1979

Mr. James P. O'Reilly, Director  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, Suite 3100  
Atlanta, Georgia 30303

Serial No. 807  
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Docket Nos: 50-280  
50-281  
50-338  
50-339  
License Nos: DPR-32  
DPR-37  
NPF-4  
CPPR-78

Dear Mr. O'Reilly:

SUBJECT: IE BULLETIN 79-24

This is in response to IE Bulletin No. 79-24, "Frozen Lines" for Surry Power Station Unit Nos. 1 and 2 as well as North Anna Power Station Unit Nos. 1 and 2.

Very truly yours,

*C. M. Stallings*

C. M. Stallings  
Vice President-Power Supply  
and Production Operations

Attachment

cc: Director, Division of Operating Reactors  
Office of Inspection and Enforcement  
Washington, D. C. 20555

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NORTH ANNA POWER STATION  
RESPONSE TO IE BULLETIN 79-24  
FROZEN LINES

The Staff has already reviewed this concern in FSAR Supplement S9-67. That information is provided here for your review.

COMMENT 9.67 For those components not housed with temperature control areas, identify and discuss the protective measures to be taken to assure their operation with regard to potential failures or malfunctions occurring due to freezing, icing or other adverse environmental conditions, which are essential in attaining or maintaining a safe shutdown.

RESPONSE

Components referred to are shown on Figure 1.2-2 of FSAR.

1. Main Circulating Water Intake Structure - The auxiliary service water pumps and the screen wash pumps are within an enclosed area, and therefore protected from the weather. The piping to and from these pumps and the pump bodies are redundantly heat traced. The motors are equipped with heaters.
2. Refueling water storage tanks - The refueling water storage tanks and chemical addition tanks are recirculated as required to prevent freezing. These tanks are insulated and of such size and volume that freezing is not a problem. All exposed piping to and from these tanks is redundantly heat traced.
3. 110,000 gal condensate tanks - The 110,000 gal condensate tanks are not heated. These tanks are within thick concrete enclosures and the contents may be recirculated if required to prevent freezing. All exposed piping to and from these tanks is redundantly heat traced.
4. Main Steam House - The main steam valve house is enclosed but unheated. During plant operations, sufficient heat is provided by the heat loss from piping. If required during periods of plant shutdown, provisions are made for portable electric heaters.
5. Fuel Oil Pump Room - The fuel oil pump room is enclosed but unheated. Because of the type of fuel oil used, heating is not required.
6. Underground pipe chases - Station underground pipe chases containing piping necessary for attaining and maintaining a safe shutdown are located below ground to a sufficient depth to be below the frost line. Therefore, no heating is required to prevent freezing.

The following additional information, not included in the referenced FSAR Supplement, is also provided.

A design change was implemented after the Unit 1 Operating License was issued and during Unit 2 construction, to install a Casing Cooling System (a subsystem of the Recirculation Spray System) for each Unit. This modification added a Casing Cooling Tank and Pumphouse as shown on FSAR Figure 1.2-2. The pumphouse for each Unit has electrical heaters for space heating. This provides for freezing protection. The tank is insulated and is recirculated as required to prevent freezing.

On Unit 2, the level transmitters for the tank are protected by heated enclosures. On Unit 1, a design change is being prepared to provide heated enclosures. Should this design change not be ready in the event of a severe winter, temporary measures will be taken to prevent freezing of the level transmitters.

It should also be noted that each main pipe run is provided with its own primary and redundant heat trace circuit. The branch lines from the main runs of pipe are individually heat traced with their own primary and redundant circuits. In addition, each circuit is provided with its own low temperature alarm providing an indication of local circuit performance.

All heat traced circuits have passed extensive field performance tests prior to initial use to demonstrate their ability to maintain fluid temperatures at a desired level above minimum ambient temperature.

It has been demonstrated that the protective measures discussed above are adequate to prevent failure or malfunction of components due to freezing.

This completes our review of our facilities and we have concluded that we have or will provide, as necessary, appropriate and adequate protection to prevent frozen lines.

SURRY POWER STATION  
RESPONSE TO IE BULLETIN 79-24  
FROZEN LINES

As directed by I.E. Bulletin 79-24, we have reviewed our plant to determine that adequate protective measures have been taken to ensure that safety-related process, instrument, and sampling lines do not freeze during extremely cold weather. The review covered the period from January 1975 until the present time. During this period the following events involving frozen lines occurred:

<u>DATE</u>	<u>COMPONENT</u>	<u>CAUSE</u>	<u>PROTECTIVE MEASURES</u>
12/19/75	Steam Generator "C" Pressure Transmitter 496, Unit 2	Transmitter sensing line frozen due to abnormally cold outside air being drawn through louvers.	Sealed intake louvers near transmitter.
1/14/77	Flow Transmitter FT-CS-203, 204	D/P Units frozen	Replaced failed strip heater.
2/11/79	Valve 2-PG-153	Diaphragm ruptured, frozen.	Replaced the valve, in- clude the area where the valve is located in the Check-Off program.

Currently under development is a Cold Weather Protection Check-Off Program which will include a comprehensive station verification of the status of any and all louvers, dampers and environmental boundaries to ensure they are providing adequate protection against freezing conditions. Also included in this program will be heat tracing circuits and insulation on all affected piping to verify its integrity.

The proposed program will include the utilization of stand-by space heaters for use in areas which are expected to be subjected to freezing conditions related to abnormal operating or maintenance conditions.

It is our intention to implement the above program on or about November 9, 1979, with the Check-Off to be performed as soon after that date as practicable and as often as necessary based on the severity of weather conditions.