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DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

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WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

TELEPHONE: AREA 704
373-4083

April 13, 1979

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

Re: RII:JPO
50-269, 50-270, 50-287

Dear Mr. O'Reilly:

With regard to IE Bulletin 79-05A which was transmitted by your letter of April 5, 1979, and in reference to my letter of April 10, 1979 on this subject, attached are the responses to Items 7, 8, 10 and 11.

Very truly yours,

William O. Parker, Jr.

RLG:scs
Attachment

cc: Director, Division of Reactor Operation Inspection
NRC Office of Inspection and Enforcement
Washington, D. C. 20555

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ELECTRICITY FOR A PROGRESSIVE PIEDMONT
75th Anniversary
DUKE POWER 1904-1979

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ITEM 7

For manual valves or manually-operated motor-driven valves which could defeat or compromise the flow of auxiliary feedwater to the steam generators, prepare and implement procedures which:

(a) require that such valves be locked in their correct position, or

(b) require other similar positive position controls.

Response

Procedures related to the operation and testing of the normal emergency feedwater system have been revised to require that:

(a) All manual valves which could defeat or compromise flow are locked open; and

(b) The controls to all manually-operated motor driven valves which could defeat or compromise flow are properly positioned ("Auto" or "Open") and tagged to denote the required position.

Refer to the response to Item 8 for additional information relative to the Oconee emergency feedwater system.

ITEM 8

Prepare and implement immediately procedures which assure that two independent steam generator auxiliary feedwater flow paths, each with 100% flow capacity, are operable at any time when heat removal from the primary system is through the steam generators. When two independent 100% capacity flow paths are not available, the capacity shall be restored within 72 hours or the plant shall be placed in a cooling mode which does not rely on steam generators for cooling within the next 12 hours.

When at least one 100% capacity flow path is not available, the reactor shall be made subcritical within one hour and the facility placed in a shutdown cooling mode which does not rely on steam generators for cooling within 12 hours or at the maximum safe shutdown rate.

Response

For the Oconee units during normal operation there exist two independent steam generator feedwater flow paths, each with capacity to remove a decay heat load of 5% FP whenever heat removal from the primary system is through the steam generators—refer to Oconee Nuclear Station Technical Specification 3.4.1. One flow path is the main feedwater and condensate system, which begins at the condenser hotwell and terminates at the steam generator main feedwater header. All the valves in this train are open during normal operation. The feedwater flow through this flow path is supplied by the combination of a hotwell pump (3 motor driven pumps normally available), a condensate booster pump (3 motor driven pumps normally available), and a main feedwater pump (2 turbine driven pumps normally available); or a hotwell pump and condensate booster pump.

The other flow path is the emergency feedwater system, which begins at the emergency feedwater pump suction from the upper surge tanks or, alternatively the condenser hotwells, and terminates at the steam generator auxiliary feedwater header. All the valves in this train are open during normal operation, with the exception of the emergency feedwater header block valve (FDW-38 and -47) to each steam generator and except during periods of testing. The block valves open when the normal feedwater flow is lost, either upon loss of main feedwater pumps or low feedwater pump discharge pressure. The feedwater flow through this flow path is supplied by a turbine driven emergency feedwater pump.

In addition to these two independent flow paths, two alternate flow paths for emergency feedwater can be made available for each unit. These are (1) a redundant emergency feedwater line from the emergency feedwater pump discharge to the steam generator emergency header bypassing the emergency feedwater header block valves and (2) cross connect of the emergency feedwater pump discharge header to both discharge headers of the emergency feedwater pumps of the other two Oconee units, making the emergency feedwater pump of either of the other units available to supply emergency feedwater in the event of a particular emergency feedwater pump becomes inoperable. Operator action is required to place these two alternate flow paths in service.

When the reactor is critical, the main feedwater train is in operation and the emergency feedwater train is in standby. Loss of main feedwater normally results in a reactor trip, particularly at higher power levels.

With regard to the emergency feedwater train:

(1) Whenever the reactor is critical, if an emergency feedwater header block valve is determined to be inoperable, then within two hours the valve in the redundant emergency feedwater line (FDW-315 or -316) shall be opened and their controls in the Control Room tagged to denote the required position.

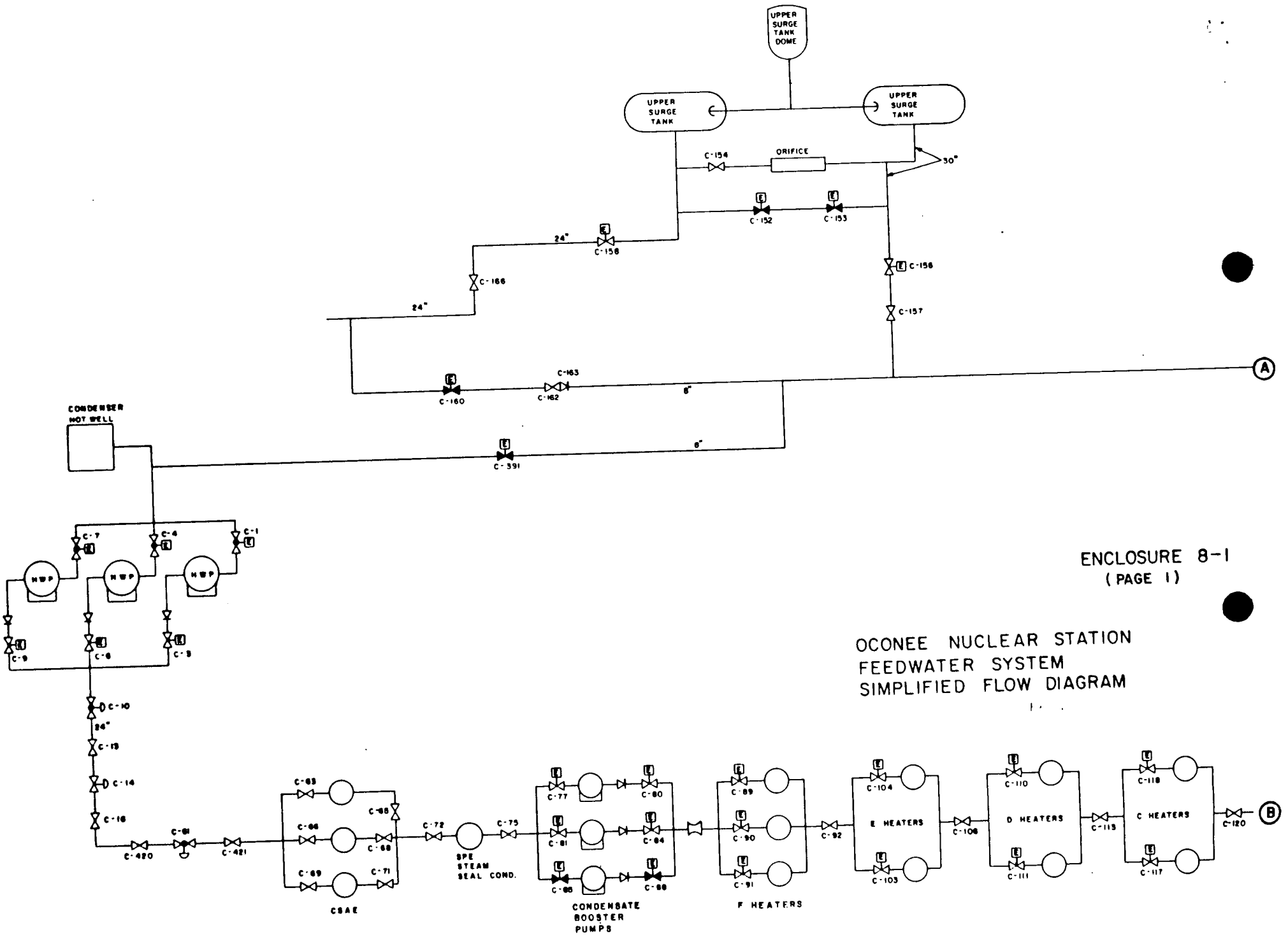
(2) Whenever the reactor is critical, if the emergency feedwater pump is determined to be inoperable, then within two hours an open flow path for emergency feedwater shall be established from the emergency feedwater pump discharge header to another unit which is subcritical to the redundant emergency feedwater header of the affected unit and the controls for the emergency feedwater pump in the Control Room tagged to denote the requirement for start up of the other unit's feedwater pump, when required. If the inoperable emergency feedwater pump is not returned to an operable status within 72 hours, or if an emergency feedwater pump from another unit is not made available within two hours of determination of the inoperable emergency feedwater pump, the affected unit will be shut down at the maximum safe shutdown rate and placed in the decay heat cooling mode. This maximum safe shutdown rate is considered to be approximately two to four hours for the time period "power operation" to subcritical and an additional 24 hours for cooldown to the decay heat cooling mode.

(3) Whenever the reactor is subcritical, the main feedwater train is inoperable and the emergency feedwater system is being used for cooling the steam generators (e.g., hot shutdown mode), within 72 hours either the main feedwater train shall be returned to operation or the unit will be placed in the decay heat cooling mode.

Operating procedures have been revised to include the above actions. Also the controlling procedure for unit startup has been revised to require verification of the operability of the emergency feedwater train prior to heating the RCS above 300°F. The periodic test procedure for emergency feedwater pump testing has been revised to include a requirement to perform visual verification that all valves in the emergency feedwater train and the emergency feedwater pump controls are returned to their normal positions upon completion of the test. Appropriate personnel have been instructed concerning these changes.

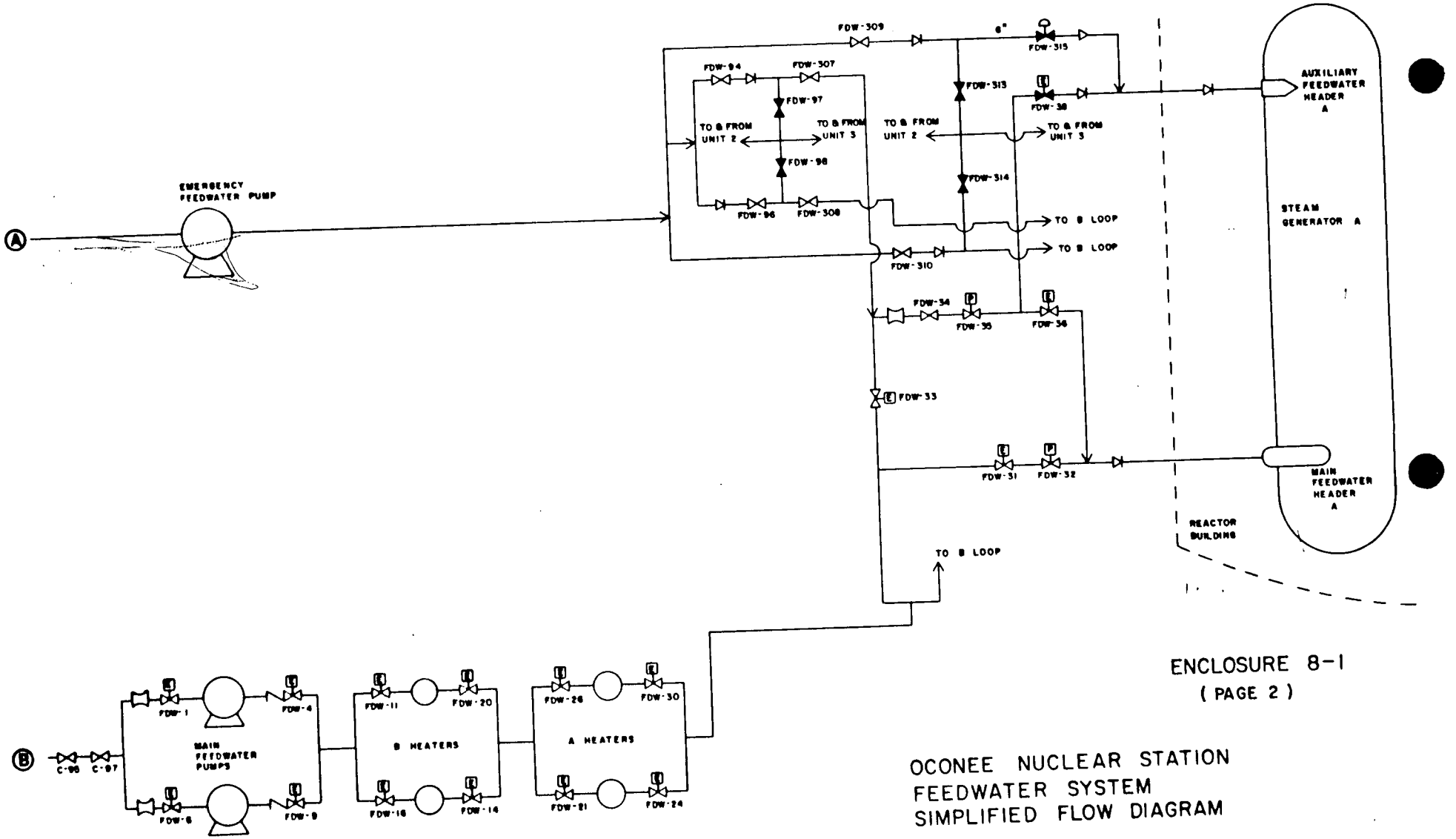
The above are intended to assure continued safe operation of the Oconee units without subjecting a unit to undesirable, deliberately imposed transient situations while a degraded emergency feedwater capability might exist and is being corrected in a timely manner.

Enclosure 8-1 provides a simplified flow diagram of the Oconee feedwater systems. The valve positions shown reflect the current system status during normal operation.



ENCLOSURE 8-1
(PAGE 1)

OCONEE NUCLEAR STATION
FEEDWATER SYSTEM
SIMPLIFIED FLOW DIAGRAM



ENCLOSURE 8-1
(PAGE 2)

OCONEE NUCLEAR STATION
FEEDWATER SYSTEM
SIMPLIFIED FLOW DIAGRAM

ITEM 10

Review and modify as necessary your maintenance and test procedures to ensure that they require:

(a) Verification, by inspection, of the operability of redundant safety-related systems prior to the removal of any safety-related system from service.

(b) Verification of the operability of all safety-related systems when they are returned to service following maintanance or testing.

(c) A means of notifying involved reactor operating personnel whenever a safety-related system is removed from and returned to service.

Response

Procedures applicable to maintenance and periodic testing have been reviewed and verified to include the provisions of 10a, b, c, above.

ITEM 11

All operating and maintenance personnel should be made aware of the extreme seriousness and consequences of the simultaneous blocking of both auxiliary feedwater trains at the Three Mile Island Unit 2 plant and other actions taken during the early phases of the accident.

Response

Formal briefings on the events at Three Mile Island 2 have been held with both operations and maintenance personnel. They have been made aware of the extreme seriousness and consequences of the simultaneous blocking of both auxiliary feedwater trains as well as other actions taken during the accident.