ENCLOSURE 1

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

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MEMORANDUM FOR: Albert F. Gibson, Director, Division of Reactor Safety
J. Philip Stohr, Director, Division of Radiation Safety and Safeguards

FROM: Luis A. Reyes, Director, Division of Reactor Projects

SUBJECT: SAFETY CONCERNS AT SURRY

The enclosure contains four safety concerns brought to my attention by an NRC inspector. All of these issues relate to maintaining safe plant operations. Items 1 and 2 relate to DRS activities and Items 3 and 4 relate to both DRS and DRSS, in that they affect both radiation monitor adequacy and safety-related system and component operation. I am requesting that you review the enclosure for potential immediate safety impact and NRC review and, as a minimum, review and document these issues as part of your FY 90 inspection plan.

If you have any questions, please call me or M. Sinkule.

Luis A. Reyes

Enclosure:
Surry Safety Concerns

cc w/encl:
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ENCLOSURE

SURRY SAFETY CONCERNS

1. The recirculation coolers are used to remove heat during the DBA to return the containment to subatmospheric within one hour. To accomplish this task, they need the required service water flows as stated in the UFSAR. The Surry heat exchangers have not been flow tested to determine that the required flows in Table 9.9-2 of the UFSAR could be met. The flow measuring devices are the same as at North Anna and have proved unreliable for flow monitoring. The devices, flow annubars, routinely become clogged and have necessitated the use of independent measuring equipment at North Anna. Actual flow testing at North Anna revealed inadequate flow settings and resulted in escalated enforcement action. There is every reason to believe that similar testing at Surry would produce similar results. In addition, a September 1988 internal document made some significant clarifications to the original Surry UFSAR, with respect to service water flow requirements, revealing the importance, to at least the licensee's design organization, of knowing actual flow measurements. The NRC has not verified nor has the licensee assured that these flow conditions can be met. Considering their importance, Surry should be required to objectively assure that these flow conditions can be met.

2. A concern exists in that failure of a containment spray (CS) pump could cause improper PH range in the spray for iodine removal. This concern is based on the need to assure that a relatively constant NaOH concentration is maintained in the CS system during an accident. A lot depends on whether credit is taken for iodine removal before the RWST and NaOH tanks are drawn down. If this is the case, then the PH range needs to be kept within boundaries, approximately 7 to 11. If the pressure drop from the NaOH tank to the suction connection of the pump is not the same as that from the RWST to the pump, the tanks will not draw down equally. A drawdown test would determine whether the NaOH tank and RWST come down equally. Apparently, a drawdown test had been conducted during startup, but the system has been changed since the original design. The licensee should be required to objectively assure that the PH during a NaOH/RWST drawdown will remain in an acceptable range for adequate iodine removal.

3. The normal reading on the component cooling water (CCW) radiation monitor is extremely high. This monitor is the first means of detecting a primary leak into the CCW system. The operator is then supposed to take action to isolate the leak. Also, a leak from the thermal barrier cooler of the reactor coolant pump would create over a 2000 psig differential between the RCS and CCW systems. The operation of this monitor raises several concerns. First, with the alarm setting of this monitor set only slightly above an extremely high normal "background" reading, the start of a significant primary-to-CCW leak could begin without the ability to identify the event until the alarm condition is reached. Second, because of this "built-in" delay time, the lack of an auto-isolate feature would compound the problem and the leak could become much worse prior to isolation. Third, both these problems provide the possibility of producing a primary-to-CCW leak of sufficient pressure to rupture the CCW system piping and

create an uncontrolled release. To remedy this problem, the high "background" readings on the CCW radiation monitor need to be reduced. An auto-isolate feature needs to be installed and the piping up to the isolation valve should be designed to handle primary system pressure.

4. There is no automatic isolation of steam generator (SG) blowdown on high blowdown radiation monitor readings. If these monitors become insensitive, as the CCW monitor is now, and the CVCS system does not do its RCS cleanup job, the end result could be a significant uncontrolled release prior to manual isolation, following a SG tube leak or rupture. The SG blowdown system should be required to have the auto-isolate capability now mandated on newer vintage Westinghouse PWRs.