July 12, 1989

MEMORANDUM TO: John N. Hannon, Director
Project Directorate III-3
Division of Reactor Projects - III,
IV, V and Special Projects

FROM: Thomas W. Alexion, Project Manager
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SUBJECT: SUMMARY OF CALLAWAY SITE VISIT DURING JUNE 19-23, 1989

During June 19-23, 1989, I visited the Callaway Plant. I started the week by receiving training for unescorted site access to the nonradiological and radiological areas of the plant. The training was a refresher and was completed by passing two examinations.

I toured the plant several times (once with Region III and NRR management) including areas such as turbine building, control building, auxiliary building and fuel building. Housekeeping was generally good with the exception of an oil leak in the safety injection/charging pump room, minor cleanup needed at the base of the diesel generators, and several carts with instrumentation that cluttered up the fuel building ventilation room. Region III management said that the plant was in good shape with respect to contamination considering that a major refueling/modification outage had just been completed.

The licensee briefed the NRC management and staff on their recent refueling/modification outage. The licensee initiated outage shift managers for round-the-clock supervision of outage activities. The licensee completed 100% eddy-current inspection of 2 steam generators, removed all 5 stuck reactor vessel studs, replaced all hafnium rod cluster control assemblies (RCCA's) with silver- indium-cadmium RCCA's, installed 52 design changes, monitored 672 locations for piping erosion and replaced piping as needed, and trained the operators for the major design changes. The major design changes include the steam generator lo-lo level trip setpoint time delay and environmental allowance modifier (lead plant), the conoseal assembly modification, the ATWS mitigating system actuation circuitry (AMSAC), the RHR autoclosure interlock removal, and the positive moderator temperature coefficient. The licensee was proud that its outage lasted only 53 days and that it has the shortest average duration of Westinghouse 4-loop unit refueling outages (8.2 weeks for Callaway compared to 16.6 weeks industry average).

During the course of the week, I audited selected 10 CFR 50.59 safety evaluations of changes approved and implemented at Callaway. The items audited were selected from modifications made during the recent refueling

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outage and other items from the licensee's latest annual 10 CFR 50.59 report dated June 1, 1989, and are discussed in the Enclosure. The auditing consisted of reviewing the change description, the 50.59 and nuclear safety evaluation discussions, and other applicable areas as needed (FSAR, P&ID's, discussions with engineering staff, examination of hardware, etc.). None of the items audited were determined to require additional review by the NRC technical staff and no violations of 10 CFR 50.59 were identified.

I accompanied an SRO (Dave Fitzgerald) on shift starting at 7:00 AM (for about 6 hours). Dave's shift began in the control room by signing off on various work activities that were scheduled for that day, and discussing the more important items with the shift supervisor (also an SRO). Following the various sign-offs and a check of plant status in the control room (the plant was operating at 100% power with no major problems, one diesel generator was out of service for maintenance activities (72-hour LCO), and there was 0.6 gpm unidentified primary system leakage (1 gpm tech spec limit)), Dave and I toured the plant. Some of the areas toured included the inoperable diesel generator to ensure that the maintenance activities were proceeding on schedule, the auxiliary building, the turbine building (three of the turbine throttle valves were full-open and the fourth valve was in a throttled position), the service water building with particular attention to primary and secondary water chemistry, and a walk around the plant including observations of the CST, RWST, and other storage tanks. Upon arrival back in the control room, the shift supervisor requested that Dave enter containment for about an hour to try to find the source of the unidentified primary system leakage, which was also causing a higher than normal noble gas activity inside containment. After a 20-minute briefing with health physics (HP), Dave and I (and two HP techs) entered containment. The search for the leakage consisted of a visual leakage search and a localized high noble gas activity search. The search was conducted on several elevation levels around the reactor vessel with particular attention to the pressurizer. No leakage was found. Dave briefed the shift supervisor and then briefed the plant staff at the licensee's 12:30 PM daily meeting, regarding the negative finding.

The containment interior appeared to be in very good order with respect to housekeeping and cleanliness. The HP techs surveyed inspection areas at Dave's direction before Dave and I entered a particular area. The HP techs had available and were using procedures for the containment entry.

On June 23, 1989, I attended the Callaway Plant on-site review committee meeting. Issues addressed include procedural changes, FSAR changes, design modifications, incident reports and future technical specification change applications. The committee also reviewed a draft LER discussing the reactor trip on May 29, 1989, when I & C personnel inadvertently allowed two leads to come in contact when hooking up flukes to power range instrumentation to do flux maps. The committee decided they needed additional details to make sure the LER correctly characterizes the root cause in terms of personnel error, procedural inadequacy or design deficiency, or some combination of causes.

Prior to leaving on June 23, 1989, I received a whole body count. My noble gas activity was reading higher than normal. The HP technician initially could not understand this, because I had entered containment on June 22, 1989, and had not been in the RCA since then. The cause was later found to be that the containment was vented on the morning of June 23, 1989, through the unit vent. I was impressed that the HP tech asked me to stick around (for about 40 minutes) until he understood why my noble gas activity was higher than normal, even though the level of activity apparently was not high enough to be a safety concern.

I feel I had a very productive week from a Project Manager's perspective and appreciated the licensee's hospitality and openness. There also appears to be a good deal of mutual respect between the licensee and the NRC.

/s/

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Enclosure:
As stated

cc: B. Little, RIII
C. Brown, RIII

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Date:	7/12/89	7/12/89	7/12/89

ENCLOSURE

1. Logic Change to Fuel Oil Transfer Pumps - Refuel 3 (CMP 88-1004)

The logic for the emergency fuel oil transfer pumps was changed so that the pumps will run continuously when their associated diesel generator is running. Other associated changes were also made. The emergency fuel oil pumps, which supply fuel oil from the storage tank to the day tank, were cycling on and off every 1 to 2 minutes to maintain fuel level between an upper and lower day tank level while the diesel generators are running. By running the pumps continuously, which is the modification, stress on the motors/pumps is reduced and reliability is improved. The licensee's written basis appears to be technically correct and the 10 CFR 50.59 questions were considered by the licensee in the safety evaluation, and resulted in the addition of new vent lines from the top of the day tank standpipes to the existing day tank vent lines so that unacceptable vacuum would not be drawn in the storage tank in the event of an inoperable storage tank vent.

2. Modify Conoseal Design - Refuel 3 (CMP 88-1115)

The function of the core exit thermocouple nozzle assembly (CETNA) is to provide a method of establishing the reactor coolant pressure boundary at the exit point of the thermocouple column from the vessel head. The old (W) CETNA design required about 2 hours each to assemble (there are four such CETNA's on the vessel head). The new (CE) CETNA requires about 15 minutes to assemble. Also, the new design allows the lower conoseal to be left assembled during head removal and reinstallation. In addition, the old design seated the upper conoseal by sequentially torquing six seat screws. The new design uses Grafoil packing at the upper joint which seals over a much larger surface area and is seated using a single large drive nut. The licensee's written basis for the change appears to be technically correct and the 10 CFR 50.59 questions were considered by the licensee in the safety evaluation. The licensee stated that the design requirements for the new CETNA meet those imposed for the original CETNA. The licensee also provided design reports, test reports, a video-tape of the installation process for the new CETNA's, and provided a mock-up demonstration of disassembly and reassembly of the old and new designs. The licensee's evaluation appeared to be very thorough.

3. Increase Size of S/G Primary Manway Insert Screws - Refuel 3 (CMP 89-1013)

This modification increased the size of the S/G primary manway insert screws from 1/4" to 5/16" diameter. The change is needed as the 1/4" screws are of a marginal size and are susceptible to breakage during manway removal or installation. The S/G primary manway insert holds a gasket in place during manway removal or installation, and ensures that only corrosion-resistant material contacts the primary coolant. The insert is stainless steel while the manway cover is carbon steel. The manway cover is secured over the insert during installation, therefore the insert screws perform their function only during assembly/disassembly of the manway. The licensee's written basis for the change appears to be technically correct and the 10 CFR 50.59 questions were considered by the licensee in the safety evaluation. The licensee stated that the amount of material removed from the S/G and insert is minimal and will not impact the function of either item. Also, seismic qualification is not changed due to the insignificant change in mass.

4. Remove Requirement for Periodic Grab Samples - 6/1/89 Letter (CN 88-17)

   This change removed the requirement to do periodic grab air samples to ensure that fixed monitors in the fuel building are operating properly, and removed the requirement to maintain periodic decay corrected source activity inventories. The licensee's written basis for the change appears to be technically correct and the 10 CFR 50.59 questions were considered by the licensee in the safety evaluation. The licensee stated that the grab samples of a localized area may not be representative compared to a process monitor which samples from an HVAC system that receives air flow from many different plant locations, therefore localized grab sampling is not a valid method to assure operability. Regarding source activity inventories, source calibration sheets are available to calculate decay corrected sources activities when this information is needed.

5. Install Vent Path Between D/G Air Compressor and Aftercooler - 6/1/89 Letter (CMP 86-0053)

   This modification installed vent valves between the standby diesel generator starting air compressor and its downstream aftercooler. These vent valves will be used to vent high pressure air from the system during periodic maintenance. The lack of vents presents a safety hazard when work is being done on the compressors. The licensee's written basis for the change appears to be technically correct and the 10 CFR 50.59 questions were considered by the licensee in the safety evaluation. The licensee stated that this modification is on equipment that is not safety related. The piping, fittings and valves utilized in this modification have been selected to be compatible with the interfacing components. A failure of any of these components will not affect the design basis of a standby diesel engine due to a downstream safety-related check valve which will prevent blowdown of the starting air tanks. Also, the slight increase in weight due to this modification will not adversely affect the existing piping system due to an additional pipe support being installed to sustain these additional loads.