Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

April 9, 1990

Dr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Attention: U.S. NRC Document Control Desk

Subject: Dresden NPS Units 2 and 3
Revised Commitments on Post Accident Sampling System
NRC Docket Nos. 50-237 and 249

Reference: Letter from T.J. Rausch to D.G. Eisenhut, "Dresden Station Units 2 and 3, Quad Cities Units 1 and 2 Information concerning NUREG 0737 Item II.B.3, Post Accident Sampling System, NRC Docket Nos. 50-237/249 and 50-254/265," dated December 29, 1982.

Dr. Murley:

The referenced letter contained Dresden Station's description of the Post Accident Sampling System (PASS)/High Radiation Sampling System (HRSS) capabilities relative to NUREG-0737 criteria.

The purpose of this letter is to document minor revisions to the HRSS major design function description, the Liquid Sample Panel (LSP) capabilities description, and the Containment Air Monitoring (CAM) unit commitments contained in the December, 1982 submittal. The reasons for these revisions and the justification are described in Attachment A. A mark-up of the affected pages of the referenced submittal is contained in Attachment B. The appropriate changes will also be provided in an update to the Dresden Units 2 and 3 UFSAR.

As indicated in Attachment A, these changes do not affect Dresden's compliance with the criteria associated with NUREG-0737 Item II.B.3 concerning post accident sampling capabilities.

Please contact this office should further information be required.

Very truly yours,

J.A. Silady
J.A. Silady
Nuclear Licensing Administrator

Attachments (2)

cc: A.B. Davis-Regional Administrator, RIII
B.L. Siegel-Project Manager, NRR
S.G. DuPont-Senior Resident Inspector, Dresden

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ATTACHMENT A

Revision to Dresden Post Accident Sampling System Commitments

Reference: (a) NUREG 0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations," dated July, 1979

(b) NUREG 0737, "Clarification of TMI Action Plan Requirements," dated October, 1980.

(c) NRC letter D.B. Vassallo to L. DelGeorge, NUREG 0737 "Item II.B.3 Post Accident Sampling System," dated August 6, 1982.

(d) Letter T.J. Rausch to D.G. Eisenhut, "Dresden Station Units 2 and 3, Quad Cities Units 1 and 2 Information concerning NUREG 0737 Item II.B.3, Post Accident Sampling System, NRC Docket Nos. 50-237/249 and 50-254/265," dated December 29, 1982.

References (a) and (b) provided the NRC requirements for Post Accident Sampling System (PASS) capabilities. Reference (c) provided the criteria contained in NUREG 0737 along with the staff's guidelines to facilitate its assessment of the acceptability of modifications and procedures to satisfy the NUREG requirements. Reference (c) also requested Commonwealth Edison to make a submittal which documented how each criterion of NUREG 0737 Item II.B.3 was satisfied. Reference (d) contains Dresden Station's submittal for the PASS/High Radiation Sampling System (HRSS).

The purpose of this letter is to document minor revisions to the HRSS major design function description, the Liquid Sample Panel (LSP) capabilities description, and the Containment Air Monitoring (CAM) unit commitments contained in the December, 1982 submittal [Reference (d)]. The reasons for these revisions and the justification are described in the following discussion.

The HRSS major design function and LSP descriptions contained in Reference (d) and the UFSAR state that the HRSS can obtain undiluted depressurized samples from the reactor building and drywell sumps during normal operation and for post accident sampling. The piping configuration currently installed at Dresden allows the HRSS to be aligned to obtain samples from the following sumps: drywell floor drain sump, drywell equipment drain sump, reactor building floor drain sumps, reactor building equipment drain tank, and HRSS waste tank. However, due to the long runs of small diameter tubing, the relatively low discharge head of the installed pumps, and possible leakage through isolation or check valves in the sample alignment, samples cannot be obtained from the drywell floor drain sump, the drywell equipment drain sump, or the reactor building floor drain sump. Although these sumps cannot be sampled at the HRSS, they can be sampled indirectly through the Radwaste Building sampling system after they have been pumped to the waste collector tank. The reactor building equipment drain tank and the HRSS waste tank can be sampled at the HRSS liquid sample panel.

The station has verified and demonstrated that the HRSS LSP is capable of obtaining the required post-accident reactor coolant samples specified in Reference (a), (b) and (c). Since the HRSS LSP requirements apply only to reactor coolant sample capabilities, the equipment and floor drain sampling capabilities outlined in Reference (d) are commitments beyond NRC requirements and would not provide any additional significant post-accident sampling capabilities.

The CAM Unit described in Reference (d) was originally designed and installed as a backup for the in-plant CAM to monitor the containment atmosphere during normal plant operation. During the initial periods of CAM Unit operation, it was discovered that moisture (condensation) accumulation in the sample lines caused frequent malfunctions and damage to the CAM Unit's sample pump. Consequently, the use of the CAM Units in the HRSS buildings for normal operation containment atmosphere monitoring was eventually discontinued. The containment atmosphere is routinely monitored during normal plant operation by Technical Specification requirement 4.6.D.1 which requires a containment air sample be obtained and analyzed once per day.

The station has verified and demonstrated that the HRSS Containment Air Sampling Panel (CASP) is capable of obtaining the required post-accident containment atmosphere samples specified in Reference (a), (b), and (c). The HRSS CASP requirements apply only to post-accident conditions. Routine containment atmosphere samples are obtained and analyzed per Technical Specification requirements. The CAM unit capabilities outlined in Reference (d) are commitments beyond NRC requirements and would not provide any significant additional post-accident sampling capabilities.

As a result of a recent corporate Chemistry and Radwaste Assessment Team recommendation, Dresden Station re-evaluated the equipment and floor drain sump sampling and the CAM Unit commitments discussed above against the requirements of NUREG 0737. This evaluation found that equipment and floor drain sump sample capabilities and containment atmosphere monitoring during normal operation are not required to meet NUREG 0737.

It is therefore acceptable to delete the previous commitment for HRSS equipment and floor drain sump sampling capability and the containment atmosphere monitoring during normal operation. The Station plans to remove the HRSS building CAM units and submit a revision to section 9.6 of the FSAR to delete references to HRSS liquid sump sampling and the HRSS Building CAM Units in the June 1990 updated FSAR submittal. The corresponding changes to the affected pages of the December, 1982 submittal are shown in Attachment B.

DRESDEN STATION
HIGH RADIATION SAMPLING SYSTEM

The High Radiation Sampling System (HRSS) at Dresden Station is provided for obtaining and analyzing samples from process systems and from the containment atmosphere during normal and post-accident conditions. Two identical concrete shielded buildings have been built to separately house the HRSS components for Units 2 and 3, and have been located adjacent to the respective reactor buildings. The sampling panels, chemical analysis equipment, instrumentation and controls for the system are located in each HRSS building.

1.0 GENERAL DESCRIPTION

The HRSS functions, building and equipment layout, description of HRSS components, and system operation are described in the following sub-sections.

1.1 Functions

The HRSS has been designed to perform the following major functions during normal plant operations and post-accident conditions:

- During normal plant operations, obtain samples from the ~~systems such as~~ reactor coolant system~~, reactor building equipment drain tank, and reactor building and drywell sumps~~.

- During normal operations, provide for ~~continuous radiation monitoring of~~ either drywell, suppression pool, or standby gas treatment atmospheres, and determine gaseous constituents in the drywell.

- Obtain post-accident reactor coolant grab sample in a shielded container suitable for transport to an on-site laboratory for analysis.

- Perform in-line chemical analysis of post-accident reactor coolant sample for chlorides, pH, conductivity, and dissolved oxygen. Degas the sample and perform in-line analysis for dissolved hydrogen and on-site analysis for radionuclides.

b. For routine, non-accident sampling, depressurized reactor coolant ~~or sump~~ sample can be captured as an open grab sample.

c. For post-accident sampling, pressurized reactor coolant can be isolated in a 30 ml flask, degassed into a 300 ml vessel where the stripped gases are diluted with argon. The stripped gases are routed to the gas chromatograph in the CAP for hydrogen determination. Alternately, a 0.02 ml "bite" of the stripped gases is captured in a shielded 15 ml serum bottle which can be removed, placed in a shielded carrying case, and transported to the on-site laboratory for isotopic analysis.

d. For post-accident sampling, undiluted depressurized reactor coolant ~~or liquid from sumps~~ can be captured in a 15 ml sealed bottle. The bottle is remotely lowered into a shielded cask resting on a special cart. The cart with cask is removed from the panel and transported to the counting facility.

e. For post-accident sampling, 24 ml of 1000 to 1 diluted depressurized sample can be captured in a sealed bottle and lowered into a shielded cask on a special cart. The cask is removed from the panel and transported to the on-site laboratory for chemical and isotopic analysis.

f. For post-accident sampling, a depressurized reactor coolant sample can be routed to the CAP panel to measure conductivity, pH, chloride, and dissolved oxygen.

The reactor coolant sample is drawn from the existing sample point on the recirculation loop. Sampling of reactor coolant under post-accident conditions does not require the startup of any isolated auxiliary system. The containment isolation valves on the sample line can be remotely opened from the control room to allow the reactor coolant sample to flow to the sampling system.

The sample lines are 1/2" OD stainless steel tubing of all welded construction up to the sample panels. Purge velocities are maintained at 1900 cc/min. The sample lines can be flushed with demineralized water, and the purge and flush volumes can be stored in the waste tank in the HRSS building before pumping the wastes to the drywell floor are performed from these panels to limit the radiation dose to the operator from the radioactive fluids in the sample panels.

a. LSP and Building Auxiliary Control Panel

The HRSS Control Panel consists of three sections. In the top section, annunciator windows indicating the various alarm conditions are located. The mid-section contains a graphical layout showing the liquid sample system flow paths, valves, pumps, and other equipment. All handswitches with indicating lights for operating valves, pumps, and HVAC equipment are located in the lower section of the control panel.

b. Chemical Monitor Panel

The Chemical Monitor Panel is an auxiliary recorder/monitor panel which contains the indicating and recording equipment for the cells and analyzers which are mounted in the CAP. The panel permits the operator to work with and observe the indicating and recording equipment from a remote location to reduce exposure under post-accident conditions.

c. CASP Control Panel

The CASP Control Panel contains selector switches, timers, pilot lights, annunciator system, pressure controller and gauge, and an electro-mechanical programmer. A mimic diagram of the CASP flow paths, valves, and equipment is also provided on the panel. The operator uses this control panel to select, initiate, and control sampling flask filling exercises. Also sample cycles for gross gamma readings of the air sample are programmed from this panel.

~~1.3.5 Containment Air Monitoring (CAM) Unit~~

~~The CAM unit is used only during normal plant operations to monitor the containment atmosphere for radionuclides. The unit is controlled by, and alarms at, a remote console located in the control room. The CAM unit is a wheeled skid on which the particulate filter assembly, the iodine charcoal canister, and the low range and~~

~~medium range noble gas monitors are mounted. A separate high range gross gamma detector is located in the maintenance aisle which monitors the incoming contaiment air sample. The remote consoles located in the control room control the operation of the GAM unit and print, alarm and log the outputs from the GAM unit and the gross gamma detector~~.

1.3.6 Gas Chromatograph (GC)

The gas chromatograph is a Bendix Model 002 unit which is used during normal operation to analyze the containment atmosphere for carbon monoxide, carbon dioxide, hydrogen, oxygen, and nitrogen. The analysis initiation, frequency, and type of record is done from a programmer and keyboard/printer located in the CAS Control Panel.

The GC can be used with proper administrative controls as a backup containment atmosphere hydrogen monitor during post-accident conditions.

1.3.7 Motor Control Center (MCC)

The MCC is located in the operating area and provides 480V power supply to the HRSS and HVAC equipment and 208/120V power supply for control, lighting, and heat tracing the sample tubing.

This MCC is powered from 480 volt Bus #26 (for Unit 2) and Bux #36 (for Unit 3). In the event of off-site power failure, standby diesel power is available for the HRSS and the MCC can be energized to meet the time limits for sampling and analysis under post-accident conditions.

2.0 HRSS OPERATION

The HRSS can be designed to provide the capability to promptly obtain and analyze reactor coolant samples and containment atmosphere samples within 3 hours after a decision is made to take such samples. The HRSS and the permanent facilities are located at ground level, and therefore, sample transport in shielded containers is not a problem. Power from standby station diesels can be manually switched on to energize the HRSS MCC in the event of off-site power failure during post-accident conditions.