



52-001

**GE Nuclear Energy**

ABWR

Date 6/3/92Fax No. —To T. Chandrasekaran  
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or (408) 925-1687Subject HVAC exhaust monitoringMessage I believe the attached addresses  
Chandra's concern.

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**ABWR****Standard Plant**

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REV B

**11.5.2.4 Plant Vent Discharge Radiation Monitoring**

This system monitors the plant vent discharge for gross radiation level during normal plant operation and collects halogen and particulate samples for laboratory analysis. The discharge through this common plant vent includes HVAC exhausts from the reactor, turbine, radwaste and service buildings. Also, this system utilizes a high-range radiation monitor that measures fission products in plant gaseous effluents during and following an accident.

A representative sample is continuously extracted from the ventilation ducting through two isokinetic probes in accordance with ANSI N13.1 and passed through the containment ventilation sample panels for monitoring and sampling, and returned to the ventilation ducting. Each sample panel has a pair of filters (one for particulate collection and one for halogen collection) in parallel (with respect to flow) for continuous gaseous radiation sampling. The gross radiation detection assembly consists of a shielded chamber, beta-gamma-sensitive GM tubes, and a check source. The extended range detector assembly consists of an ionization chamber which measure radiation levels up to  $10^5 \mu\text{Ci/cc}$ . A radiation monitor in the main control room analyzes and visually displays the measured radiation level.

The sample panel shielded chambers can be purged with room air by using two solenoid valves operated from the control room to check detector response to background radiation, thus checking operability of the gross radiation channel.

Power is supplied from 120-Vac local bus for the radiation monitor and for the sample panel.

The radiation monitor initiates trips for alarm indications on high-high, high, and low radiation from each detector assembly. Also, the sampled line is monitored for high or low flow indications and alarming.

Table 11.5-2 presents the gaseous and airborne monitors for the effluent radiation monitoring system.

**11.5.2.5 Radwaste Effluent Radiation Monitoring**

This subsystem continuously monitors the radioactivity in the radwaste effluent prior to its discharge and drainage.

Liquid waste can be discharged from the sample tanks containing liquids that have been processed through one or more treatment systems such as evaporation, filtration, and ion exchange. Prior to discharge, the liquid is extracted from the liquid drain treatment process pipe, passed through a liquid sample panel which contains a detection assembly for gross radiation monitoring, and returned to the process pipe. The detection assembly consists of a scintillation detector mounted in a shielded sample chamber equipped with a check source. A radiation monitor in the control room analyzes and visually displays the measured gross radiation level.

The sample panel chamber and lines can be drained to allow assessment of background buildup. The panel measures and indicates sample line flow. A solenoid-operated check source operated from the control room can be used to check operability of the channel.

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\* The reactor building essential electrical HVAC, diesel generator HVAC, main control room HVAC, service building clean ventilation, technical support HVAC, and the electrical building ventilation systems contain no radioactive systems. The only releases to the environs by these systems would first have to be brought into the buildings by their own supply fans. Hence, monitoring of these exhausts are not required or provided.