

## **6.8 HYDROGEN CONTROL SYSTEMS**

### **6.8.1 GENERAL**

The Calvert Cliffs containment has been designed to promote circulation of the contained air. Natural circulation is enhanced by large vent areas between compartments and by the use of gratings between elevations. A thorough review has been conducted to ascertain that no areas exist within which gases could be trapped. As a result of this review, design features such as the venting of the pressurizer compartment have been incorporated. Mechanical mixing of the air is achieved using the containment air recirculating and cooling system and the iodine removal system. Under LOCA conditions, hydrogen and radioisotopes will be rapidly distributed throughout the containment due to turbulent currents introduced by the escaping steam and water and natural convection due to the temperature differential between the sump water and the containment atmosphere. The air recirculation and Containment Spray Systems also promote mixing and minimize nonuniformities in the containment atmosphere.

On March 2, 2004, the Nuclear Regulatory Commission approved a license amendment which changed the definition of DBEs to exclude hydrogen generation in Containment as a consequence of the event. The amendment was based, in part, on the size of the Containment and free circulation of air within the Containment. Hydrogen recombiners are no longer needed and were removed from the licensing basis. However, hydrogen analyzers are required to be retained as non-safety-related equipment to evaluate events beyond the design basis.

### **6.8.2 DELETED**

### **6.8.3 CONTAINMENT VENT SYSTEM**

The Containment Vent System (Figure 9-20A) is used during power operations to vent the Containment to maintain containment pressure and airborne radioactivity within Technical Specification limits.

The vented air will be introduced to the penetration room exhaust system and will be passed through the penetration room exhaust system's HEPA and charcoal filters before being discharged to the environs. The system is equipped with a flow monitor and motor-operated valves.

The containment vent may be used to purge hydrogen from Containment if desired.

Upon receipt of a SIAS, CRS, or a high radiation signal, the MOVs close automatically. During post-accident conditions with the CRS or containment high-radiation signal present, the Containment Vent System can be operated by overriding the CRS or containment high-radiation closing signal using key-operated override handswitches on control panels 1C10 and 2C10.