

**Enclosure 1**  
**Changes to PSAR Chapter 9**  
**(Non-Proprietary)**

## 9.2 REACTOR BUILDING HEATING, VENTILATION, AND AIR CONDITIONING SYSTEMS

### 9.2.1 Description

The reactor building heating ventilation and air conditioning system (RBHVAC) provides independent environmental control to the Reactor Building (RB) and associated habitable spaces. In addition to directly supporting environmental control for workers in designated low hazard zones, the RBHVAC ~~ensures~~ ventilation air flow and leakage is designed to be from a low hazard potential to a higher hazard potential. The RBHVAC system in the RB is independent from the ventilation systems of surrounding buildings.

The RBHVAC performs the following non-safety related functions:

- Maintain environmental conditions (air quality, temperature, humidity, pressure, and noise levels) for personnel health, habitability, and for SSC operability.
- Provide a means to control and monitor tritium, beryllium and other controlled effluents.
- Monitor exhaust air vented from the RB for controlled effluents.
- Ensure ventilation flow and leakage from areas of low hazard to areas of higher hazard potential.
- Minimize contamination of facility areas.

The system is comprised of fans, duct work, dampers, heaters, and filters that draw filtered supply air from the atmosphere and supply it to the RB. Ventilation exhaust that is discharged to the atmosphere from portions of the RB that potentially contain contaminants during normal operation is monitored and utilizes appropriate filtration, including HEPA filters.

### 9.2.2 Design Bases

The RBHVAC systems ensure that temperature, relative humidity and air circulation rates are within limits for personnel and equipment. The systems are also designed to ensure that normal sources of airborne radioactive material, including tritium, are controlled so that occupational doses do not exceed the requirements of 10 CFR 20. In addition, the RBHVAC system ensures that chemical hazards (such as Beryllium) are within applicable limits.

Consistent with PDC 2, Design Bases for Protection Against Natural Phenomena, safety-related SSCs located near the RBHVAC are protected from the adverse effects of RBHVAC failures during a design basis earthquake.

Consistent with PDC 60, Control of Releases of Radioactive Materials to the Environment, the RBHVAC is designed to control the release of radioactive materials in gaseous effluents during normal reactor operation.

Consistent with PDC 64, Monitoring Radioactivity Releases, the RBHVAC is designed to provide for monitoring the reactor building effluent discharge paths for radioactivity that may be released during normal operations.

Consistent with 10 CFR 20.1406, the RBHVAC is designed, to the extent practicable, to minimize contamination of the facility and the environment, and facilitate eventual decommissioning.

### 9.2.3 System Evaluation

The RBHVAC does not perform safety-related functions and is not credited for the mitigation of postulated events. The system is also not credited for performing safe shutdown functions.

Portions of the RBHVAC may be located in proximity to SSCs with safety-related functions. Those safety-related SSCs are protected from failure of the RBHVAC during a design basis earthquake by either