

TOLEDO EDISON COMPANY  
DAVIS-BESSE NUCLEAR POWER STATION UNIT ONE  
10 CFR 20.405(a) Report of Overexposure on April 30, 1980  
(Report NP-02-80-01)

Date and time of event: April 30, 1980, at 2330 hours

Extent of the exposure: A Chemistry and Health Physics individual received a dose of 4.7 rems, as determined within twelve hours following the incident from his primary dosimeter. Within four hours after the incident, the dose had been estimated to be approximately 4.5 rems. The estimated dose was based on the following information:

- a) Radiation surveys taken in the area which indicated radiation levels to be approximately 200 R/hr.
- b) A time and motion study where the time in the areas was estimated to be 45 seconds.
- c) Two high range self-reading dosimeters positioned at the location of the exposure to simulate the individual's dose; these indicated 4.5 rems for the estimated exposure time.

Cause of the exposure: In accordance with Operating Procedure SP 1102.15 (Fill, Drain, and Purification of the Refueling Canal), a Chemical and Radiation Tester and an Assistant Shift Supervisor, who remained approximately three feet behind the tester, entered a tunnel within the containment vessel which leads to the bottom of the reactor vessel to check for leakage from the refueling canal seal plate gasket. The entry into the locked high radiation area was made in accordance with Health Physics procedures. The exposure resulted from an erroneously low reading on the meter or misreading of the Teletector. Both individuals knew that the incore power detectors were withdrawn from the core into the incore detector tubes which creates high radiation in the area. Calibration of the radiation survey meter was still valid as indicated by the calibration due date sticker on the instrument. After the incident, the survey meter was verified to be responding properly to radiation on each scale.

Corrective steps taken: The individual was removed from working in radiation controlled areas. Health Physics Procedure HP 1601.04 (Radiation, Contamination and Radioactive Airborne Areas) was revised to include more stringent requirements for entering locked high radiation areas. These include verbal permission from a Chemistry and Health Physics management individual, and a requirement to use two different types of high range survey meters. In addition, a wire woven door, which can be locked, was installed at the entrance to the tunnel. Also, SP 1102.15 has been revised to delete the step to visually inspect the refueling canal seal plate gasket while filling the refueling canal.