



**Docket File Information**  
**SAFETY INSPECTION REPORT**  
**AND COMPLIANCE INSPECTION**



1. LICENSEE <b>Dow Chemical Company</b> REPORT NUMBER(S) <b>2008-001</b>		2. NRC/REGIONAL OFFICE <b>Region III</b>	
3. DOCKET NUMBER(S) <b>030-04783</b>	4. LICENSE NUMBER(S) <b>21-00265-06</b>	5. DATE(S) OF INSPECTION <b>April 9 ,2008</b>	
6. INSPECTION PROCEDURES USED <b>87126</b>	7. INSPECTION FOCUS AREAS <b>1 through 7</b>		

**SUPPLEMENTAL INSPECTION INFORMATION**

1. PROGRAM CODE(S) <b>03610</b>	2. PRIORITY <b>3</b>	3. LICENSEE CONTACT <b>James Weldy, CHP, RSO</b>	4. TELEPHONE NUMBER <b>989-636-1440</b>
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Main Office Inspection      Next Inspection Date: **4/2011**

Field Office \_\_\_\_\_

Temporary Job Site \_\_\_\_\_

**PROGRAM SCOPE**

This licensee is an industrial research and development chemical company performing research at this location under an industrial broad-scope license. Approximately 60 personnel were approved to perform small animal research in 20 laboratories, all located in Bldgs. 1803 and 1602. They used primarily carbon-14 and tritium as tracers, and since the last inspection discontinued using iodine-125. Waste was disposed through incineration at the facility in accordance with license condition 18.A. The radiation safety committee met quarterly to discuss issues related to all uses of radioactive material at this facility.

The licensee possessed around 150 specifically licensed fixed gauges, primarily level gauges containing cesium-137, and some thickness gauges containing krypton-85 and americium-241. According to the licensee, they do not possess sufficient quantities of nuclides of concern to be required to implement Increased Controls (ICs). The inspectors verified this by review of the licensee's inventory records. Gauges were leak tested, inventoried, and shutter checked at the required intervals in accordance with manufacturers specifications and license conditions. According to the RSO, the licensee did not perform any maintenance on the gauges except for cleaning. All gauges were appropriately marked indicating radioactive material. In addition to the fixed gauges, the licensee possessed four portable gauges which were stored and transported in accordance with the new gauge security rule (10 CFR 30.34(i)). The gauges were used primarily at the plant, though they were transported to temporary job sites about once a year. Three personnel used the gauges routinely, and all had attended the manufacturer's training course. The inspectors reviewed an event reported to the NRC in a letter dated July 12, 2007. It was the inspectors' opinion that the licensee took appropriate corrective actions in response to the reported event involving an open shutter on a gauge that was in storage.

**Performance Observations**

Licensee personnel explained how unsealed material was ordered, received, used, inventoried, secured, and disposed in the research areas, and described how waste was packaged and transferred to the incinerator facility for disposal. Licensee personnel demonstrated survey meter QC and survey techniques. The inspectors' did not identify any concerns.

The highest wholebody exposure for 2007 was 20 mrem and the highest extremity exposure was 100 mrem. The individual who oversaw the fixed gauges described lock-out and leak test procedures. Interviews conducted with plant workers revealed that under no circumstances would a vessel with a level gauge be entered without notifying the RSO in advance. The inspector performed independent and confirmatory radiation measurements which indicated radiation levels consistent with licensee survey records and postings.