

INSPECTION RECORD

Region III Inspection Report No. 030-36647/10-01

License No. 21-23397-02 Docket No. 030-36647

Licensee (Name and Address):

City of Detroit – Water and Sewage Department

3501 Chene Street

Detroit, MI 48207

Licensee Contact: K.V. Ramachandran, Head Engineer Telephone No. 313-833-8443

Priority: 5 Program Code: 3121

Date of Last Inspection: 9/15/2005 Date of This Inspection: 11/9/2010 with continued in-office review through 11/23/10 to review license amendment request to change RSO

Type of Inspection: () Initial () Announced (X) Unannounced
(X) Routine () Special

Next Inspection Date: 11/2015 (X) Normal () Reduced

Summary of Findings and Actions:

- () No violations cited, clear U.S. Nuclear Regulatory Commission (NRC) Form 591 or regional letter issued
- () Non-cited violations (NCVs)
- () Violation(s), Form 591 issued
- (X) Violation(s), regional letter issued
- () Followup on previous violations

Inspector AE Bloomer for
Andrew M. Bramnik, Health Physicist

Date 12/10/10

Approved TE Bloomer
Tamara E. Bloomer, Chief, MIB

Date 12/10/10

PART I-LICENSE, INSPECTION, INCIDENT/EVENT, AND ENFORCEMENT HISTORY

1. AMENDMENTS AND PROGRAM CHANGES:

<u>Amendment No.</u>	<u>Date</u>	<u>Subject</u>
0	11/9/2004	New License (-02) Issued
5	7/31/2004	Previous License (-01) Expired

2. INSPECTION AND ENFORCEMENT HISTORY:

No violations were identified during prior inspections on September 15 and February 11, 2005. The licensee previously possessed an NRC License (No. 21-23397-01) using the same materials and at the same location. However, the licensee did not renew their license in a timely manner, and the license expired on July 31, 2004. The license was reissued under License No. 21-23397-02 on November 9, 2004.

3. INCIDENT/EVENT HISTORY:

None

PART II - INSPECTION DOCUMENTATION

1. ORGANIZATION AND SCOPE OF PROGRAM:

Management Structure:

Head Engineer

Senior Assistant Civil Engineer

Senior Construction Inspector

The licensee operated a portable moisture/density gauge program with a main office in Detroit, Michigan and was authorized to possess and use sealed sources of cesium-137 and americium-241 at locations where the NRC maintains jurisdiction. At the time of the inspection, the licensee possessed four Campbell Pacific Nuclear (CPN) model number MC-3 portable moisture/density gauges containing sealed sources of cesium-137 and americium-241. All four gauges were in storage as of the inspection. The licensee had originally intended to restart their gauge program, but ultimately did not do so for various reasons including budget concerns. The licensee previously employed four gauge operators.

In August 2010, the radiation safety officer (RSO) retired from the licensee's organization. Two individuals who had both completed nuclear gauge safety training from the manufacturer had oversight of the radiation protection program: Mr. Casey Mansoor, Senior Assistant Civil Engineer, who had previously been listed as the RSO for the license; and Ms. Renee Culver, Senior Construction Inspector, the proposed RSO. Mr. Mansoor and Ms. Culver reported to the Head Engineer at the department Field Engineering Group. This item is discussed in greater detail in Section 4, below.

At the time of the inspection, the licensee was working with a consultant licensed by the State of Ohio to return their gauges to the manufacturer for disposal.

2. SCOPE OF INSPECTION:

Inspection Procedure(s) Used: 87124

Focus Areas Evaluated: Sections 03.01 through 03.07

This inspection included observations of gauges in storage at the licensee's permanent storage facility, interviews with licensee personnel, and a records review. All gauges were observed as being stored in accordance with regulatory requirements.

No work at temporary job sites was available for observation at the time of the inspection. Interviews conducted with available staff revealed an adequate level of understanding of emergency and material handling procedures and techniques. All gauges were observed as adequately secured with two independent barriers to removal while in storage. The licensee demonstrated how gauges were tracked using utilization logs when they were last used.

3. **INDEPENDENT AND CONFIRMATORY MEASUREMENTS:**

Independent measurements taken did not indicate readings in excess of limits in Title 10 of the Code of Federal Regulations (CFR) Part 20, in restricted or unrestricted areas. Personal whole body dosimetry was observed during the inspection, and records did not indicate doses in excess of 10 CFR Part 20 limits.

The licensee was not required to and did not possess a radiation survey meter; therefore confirmatory side-by-side measurements could not be conducted.

4. **VIOLATIONS, NCVs, AND OTHER SAFETY ISSUES:**

- A. Condition 11 of NRC License No. 21-23397-02 authorized a specifically named individual to fulfill the duties and responsibilities of the Radiation Safety Officer (RSO) for the license.

Contrary to the above, between August 30 and November 22, 2010, an individual, specifically authorized by Condition 11 of the license to fulfill the duties and responsibilities as RSO, was no longer employed by the licensee and did not fulfill the duties and responsibilities as RSO. Specifically, the licensee failed to amend their license to assign a new RSO for approximately three months following the previous RSO's retirement.

The root cause of this violation was a lack of awareness by the licensee of the need to amend their NRC license within 30 days of a proposed change in RSO. As corrective actions, the licensee submitted an amendment request to the NRC to change their RSO to Ms. Renee Culver. The request contained both nuclear gauge safety and U.S. Department of Transportation (DOT) hazmat training for Ms. Culver. This request was received on November 22, 2010. The licensee stated that Ms. Culver would remain as the RSO until they had disposed of all of their radioactive materials, and terminated their license. On November 22, 2010, the licensee requested funds from their management to ship their gauges for disposal. The licensee expected to ship their gauges to the manufacturer for disposal before December 31, 2010, and terminate their license shortly thereafter.

- B. Condition 16 of NRC License No. 21-23397-02 states that the licensee shall conduct a physical inventory every 6 months to account for all sources and/or devices received and possessed under the license.

Contrary to the above, the licensee failed to conduct a physical inventory to account for all sources and/or devices received and possessed under the license between September 16, 2005 and November 6, 2010, an interval that exceeds 6 months.

The root cause of this violation was a lack of awareness by the licensee of the need to conduct physical inventories while their gauges were in storage. Specifically, the licensee mistakenly believed that inventories did not need to be performed while their material was in storage and not being used.

As corrective actions, on November 6, 2010, the licensee conducted a physical inventory of all sources and devices contained under their license. The inventory confirmed that the licensee maintained possession of all the radioactive materials they had ever

possessed. As long-term corrective actions, the licensee's staff committed to conduct physical inventories every 6 months until all radioactive materials were disposed of.

- C. Title 10 CFR 20.1101(c) states that the licensee shall periodically (at least annually) review the radiation protection program content and implementation.

Contrary to the above, the licensee failed to review the radiation protection program content and implementation between September 16, 2005, and November 6, 2010, an interval that exceeds one year.

The root cause of this violation was a lack of awareness by the licensee of the need to conduct periodic reviews of the radiation protection program. As corrective actions, on November 6, 2010, the licensee's staff completed a review of the radiation protection program including leak tests, a physical inventory, and a review of program documentation. As long-term corrective actions, the licensee's staff committed to conduct annual reviews until all radioactive material was disposed of and their license was terminated.

5. **PERSONNEL CONTACTED:**

- *& Casey Mansoor – Senior Assistant Civil Engineer
- * Renee Culver – Senior Construction Inspector
- * K.V. Ramchandran – Head Engineer

Use the following identification symbols:

- * Individual(s) present at November 9, 2010 preliminary on-site exit meeting
- & Individual(s) present at November 23, 2010, telephone exit meeting

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