ENCLOSURE 6 – INSPECTION RECORD

Region: III **Inspection Report No.** 2014001 **License No.** 21-35113-01
Docket No. 030-38693

Licensee: Ford Motor Company – Research & Innovation Center
2101 Village Road, MD 1049
Dearborn, MI 48121

Locations Inspected: Same as above.

Licensee Contact: Scott Larkins, Radiation Safety Officer **Telephone No**. 313-323-1533

Program Code: 03620 **Priority**: 5

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

Last Inspection Date: N/A **Date of This Inspection**: 07/30/2014

Next Inspection Date: 07/30/2019 (X) Normal ( ) Reduced

Justification for reducing the routine inspection interval:

N/A

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
( ) Follow-up on previous violations

Inspector(s) Ryan J. Craffey, Health Physicist

/RA/ Date ***08/19/2014***
Signature

Approved Aaron T. McCraw, Chief, MIB

/RA/ Date: ***08/22/2014***
Signature

ML: 14237A479

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

1. AMENDMENTS AND PROGRAM CHANGES SINCE LAST INSPECTION:

AMENDMENT #	DATE	SUBJECT
1	03/26/2014	Revised description of materials
0	02/12/2014	Initial issuance of license

2. INSPECTION AND ENFORCEMENT HISTORY:

None to date. This was the initial inspection of Ford Motor Company – Research and Innovation Center.

3. INCIDENT/EVENT HISTORY:

There have been incidents or events since the license was issued.

PART II – INSPECTION DOCUMENTATION

1. ORGANIZATION AND SCOPE OF PROGRAM:

Ford Motor Company – Research & Innovation Center was authorized by NRC Materials License No. 21-35113-01 to use radioactive isotopes of cobalt and manganese for the purposes of automotive research and development. At the time of the inspection, the licensee possessed these nuclides in steel engine components that had undergone thin-layer activation. The licensee received these components from a cyclotron operator in Germany for use in closed-loop lubricant research, conducted by one of two authorized users. The Radiation Safety Officer (RSO) was a Senior Safety Engineer at the Center.

2. SCOPE OF INSPECTION:

Inspection Procedure(s) Used: 87126

Focus Areas Evaluated: All

The inspector toured the Dearborn, Michigan facility to evaluate the licensee's measures for material security, hazard communication and exposure control. During this tour the RSO and one authorized user demonstrated implementation of procedures for package receipt, low-level waste handling, contamination control, and spill response. Through these demonstrations and other discussions, the inspector found that both individuals were knowledgeable of radiation protection principles.

The inspector reviewed the licensee's radiation safety training materials, its first audit of the radiation safety program, and a selection of other related records, including inventories and shipping documentation. The licensee had not yet received the results from its first quarter of dosimetry.

3. INDEPENDENT AND CONFIRMATORY MEASUREMENTS:

Using a Ludlum 2403 survey meter and a model 44-9 pancake probe, both calibrated on April 15, 2014, the inspector conducted independent surveys in and around areas of the facility where radioactive material was used and stored. The inspector found no readings which would indicate residual contamination or exposures to members of the public in excess of regulatory limits.

4. VIOLATIONS, NCVs, AND OTHER SAFETY ISSUES:

On July 30, 2014 the inspector identified a violation of License Condition 16 for the licensee's failure to survey the facility in accordance with the survey frequencies published in Appendix Q to NUREG-1556, Vol. 7.

During a discussion of procedures for contamination control, the inspector found that the licensee had not conducted any routine surveys of its facility since beginning licensed activities on April 30, 2014. The licensee did possess a calibrated survey instrument, but had only intended to use it in response to spills involving radioactive material.

Table Q.1 of Appendix Q to the NUREG indicates that when unsealed forms of radioactive material are in use, the licensee should survey that location at a frequency based on the activity of material used (in terms of the Annual Limit on Intake, or ALI). The engine components in use at the time of the inspection contained approximately 16 ALIs of cobalt-56 (Co-56), among other nuclides which represented approximately 0.5 ALIs in total. However, the vast majority of this material was physically bound in the steel components; only a very small fraction – the quantity removed by wear and suspended in oil, about 0.2 mg (0.002 ALIs of Co-56) per test – presented a credible contamination risk.

Although the licensee had not performed any routine surveys of the facility, the observed condition of the laboratory, the licensee's liberal use therein of personal protective equipment and other contamination controls, and the absence of any major oil leaks or spills since operations began in April 2014 suggested to the inspector that the probability of residual contamination (and therefore the likelihood of a missed opportunity to identify a condition adverse to safety) was low. This was further supported by the aforementioned independent surveys, which found no evidence of contamination.

The inspector determined that the root cause of the violation was a lack of understanding of regulatory requirements. As corrective action for the apparent violation, the licensee committed to performing surveys at the required frequencies using appropriate instrumentation.

5. PERSONNEL CONTACTED:

Scott Larkins, Radiation Safety Officer
Rob Zdrowski, Authorized User

Attended exit meeting on July 30, 2014.

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