

## INSPECTION RECORD

**Region:** III      **Inspection Report No.** 2016001

**License No.** 21-03076-01

**Docket No.** 030-04814

**Licensee:** Empire Iron Mining Partnership  
P.O. Box 38  
Palmer, MI 49871

**Locations Inspected:** 101 Empire Mine Road, Palmer, Michigan

**Licensee Contact:** Lawrence Gray, RSO

**Telephone No.** 906-475-3521

**Program Code:** 03120      **Priority:** 5

**Type of Inspection:**      ☐ Initial      ☒ Routine      ☐ Announced  
   ☐ Special      ☒ Unannounced

**Last Inspection Date:** 01/04/2012      **Date of This Inspection:** 09/12-13/2016

**Next Inspection Date:** 09/12/2018      ☐ Normal      ☒ Reduced

Justification for reducing the routine inspection interval:

The license has been placed in standby. This will reduce the expiration date to two years from the date of the amendment (October 31, 2018). The licensee should be inspected again before expiration date to evaluate the status of licensed activities.

### 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
- ☒ Violation(s), regional letter issued
- ☐ Follow-up on previous violations

**Inspector:** Ryan Craffey, Health Physicist

/RA/

Signature

**Date** 11/07/2016

**Approved:** Aaron T. McCraw, Chief, MIB

/RA/

Signature

**Date** 11/07/2016

## **PART I – LICENSE, INSPECTION, INCIDENT/EVENT AND ENFORCEMENT HISTORY**

### **1. AMENDMENTS AND PROGRAM CHANGES SINCE LAST INSPECTION:**

<u>AMENDMENT #</u>	<u>DATE</u>	<u>SUBJECT</u>
60 (corrected copy)	08/31/16	Revised terms of some LCs
60	07/03/14	New RSO, revised terms of some LCs
59	04/01/14	License renewal
58	10/04/13	New RSO for NOLAs
57	06/19/13	New RSO for level/density gauges

On August 2, 2016, the licensee notified the NRC that it would indefinitely suspend the conduct of principal activities at this facility by September 1, 2016. At the time of the inspection, an action to place the license in standby was still pending.

### **2. INSPECTION AND ENFORCEMENT HISTORY:**

The last inspections of the Empire Mine were on January 4, 2012, and September 16, 2010. No violations of NRC requirements were identified as a result of either routine inspection.

### **3. INCIDENT/EVENT HISTORY:**

The licensee reported no incidents or events to the NRC since the last routine inspection.

## **PART II – INSPECTION DOCUMENTATION**

### **1. ORGANIZATION AND SCOPE OF PROGRAM:**

Empire Iron Mining Partnership was authorized to use fixed nuclear gauges for density and level measurements and for neutron-activated on-line sample analysis at its facility in Marquette County, Michigan. On September 1, 2016, the facility formally halted operations due to economic factors, and transitioned to a period of indefinite idle and long-term care. The licensee removed all density and level measuring devices from service, as authorized by the conditions of its license, and placed them in secure storage on the premises. With the help of an authorized service provider, the licensee transferred the sources from its neutron on-line analyzers to a sister mine in Minnesota, who also possessed similar equipment and had recently amended their radioactive materials license to accommodate the additional material. Although the suspension of operations resulted in a number of layoffs, the licensee retained its RSO and a number of authorized users, as these individual continued to work at the Tilden Mine, a sister mine adjacent to Empire.

2. SCOPE OF INSPECTION:

Inspection Procedure(s) Used: 87124

Focus Areas Evaluated: All

The inspector toured the licensee's facility to evaluate the licensee's continued measures for materials security, hazard communication, and exposure control. The inspector toured the storage warehouse where the licensee's density and level gauges were stored. Access to the facility was controlled solely by the RSO through a locked personnel door and padlocks on the inside of a large roll-up door. Independent surveys outside the building found no readings above regulatory limits. The inspector compared inventory records against what was stored in the warehouse, and was able to account for all of the licensee's density and level gauges. The inspector interviewed the RSO and other involved staff to review the implementation of gauge removal procedures. The inspector found that those involved were knowledgeable of these procedures, as well as the radiological risks inherent in the operations, and necessary safety precautions to protect against those risks.

The inspector also reviewed a selection of records while on site, including inventories, leak test results, authorized user training, and paperwork related to the transfer of the neutron on-line analyzer sources. During the period of in-office review, the inspector also reviewed a selection of area survey records taken in the vicinity of density and level gauges prior to their removal from service, and the radiation work permit for the removal of the gauges, signed by the RSO.

3. INDEPENDENT AND CONFIRMATORY MEASUREMENTS:

The inspector conducted independent surveys using a ThermoFisher Scientific RadEye G Gamma Survey Meter (calibrated on April 22, 2016). Readings at the surface of select gauges in storage were consistent with those indicated in the respective certificates of registration. Readings in unrestricted areas around the gauge storage warehouse were below regulatory limits.

4. VIOLATIONS, NCVs, AND OTHER SAFETY ISSUES:

The inspector identified no violations of NRC safety requirements as a result of this inspection. However, the inspector did identify violations of NRC security requirements, which are documented in a non-public Security Addendum.

5. PERSONNEL CONTACTED:

Ben Collins – Area Manager, Electrical  
# Lawrence Gray – Safety/Training Representative, RSO  
Dave Koski – Metallurgy Technician  
Lawrence Roncaglione – Instrument Repairman

# Participated in telephonic exit meeting on October 24, 2016.