

INSPECTION RECORD

Region: III

Inspection Report No. 2017001

License No. 21-26757-01

Docket No. 030-34252

Licensee: O-N Minerals (Michigan) Company
d/b/a Carmeuse Lime and Stone
1035 Calcite Road
Rogers City, MI 49779

Locations Inspected: Same as above

Licensee Contact: Roger Nash, Radiation Safety Officer

Telephone No. 989-734-5329

Program Code: 03120 Priority: 5

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

Last Inspection Date: 07/31/2012

Date of This Inspection: 07/13/2017, with continued in-office review through 08/24/2017

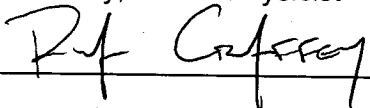
Next Inspection Date: 07/13/2022

(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
- () Follow-up on previous violations

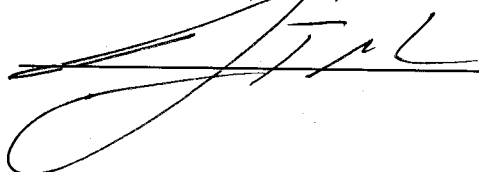
Inspector: Ryan Craffey, Health Physicist



Signature

Date 9/8/17

Approved: Aaron T. McCraw, Chief, MIB



Signature

Date: 9/11/17

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> |
|--------------------|-------------|----------------|
| 05 | 09/16/12 | New RSO |

The licensee disposed of all remaining licensed material on 08/11/17. The licensee has no plans to obtain any more radioactive material, and therefore, intends to terminate its NRC Materials License.

2. INSPECTION AND ENFORCEMENT HISTORY:

| <u>REPORT #</u> | <u>DATE</u> | <u>TYPE</u> | <u>RESULTS</u> |
|-----------------|-------------|-------------|----------------|
| 2012001 | 07/31/12 | Routine | No violations |
| 2007001 | 11/14/07 | Routine | No violations |
| 2002001 | 10/10/02 | Routine | No violations |

3. INCIDENT/EVENT HISTORY:

No open items or events since the last routine inspection.

PART II – INSPECTION DOCUMENTATION

1. ORGANIZATION AND SCOPE OF PROGRAM:

O-N Minerals (Michigan) Company, d/b/a Carmeuse Lime and Stone, was authorized by NRC Materials License No. 21-26757-01 to use fixed process gauges at its 8,000-acre open pit limestone quarry in Rogers City, Michigan. The licensee possessed two Texas Nuclear 5204 source holders, each nominally containing 500 millicuries of cesium-137. These gauges were installed on piping in the quarry's slurry pump house, and were used for slurry density measurements. The RSO was the only individual routinely involved in the use and maintenance of the gauges.

2. SCOPE OF INSPECTION:

Inspection Procedure(s) Used: 87124

Focus Areas Evaluated: All

The inspector toured the quarry in Rogers City to evaluate the licensee's measures for material security, hazard communication and exposure control. The inspector interviewed the RSO to discuss the use and maintenance of the two fixed gauges, and reviewed a selection of records, including quarterly shutter check and inventory records and triennial leak test results.

3. INDEPENDENT AND CONFIRMATORY MEASUREMENTS:

Using a Thermo Fisher RadEye G survey meter last calibrated on February 22, 2017, the inspector conducted independent surveys at the licensee's facility in Rogers City. The inspector found no readings that would indicate residual contamination or exposures to members of the public in excess of regulatory limits.

4. VIOLATIONS, NCVs, AND OTHER SAFETY ISSUES:

During a discussion of the status of licensed activities, the inspector learned that the license had removed both of its own gauges from service, contrary to the prohibitions in Condition 17 of their license.

On December 12, 2016, the licensee's radiation safety officer (RSO), who received training from the manufacturer on gauge installation and removal during a 40-hour RSO course he completed in June 2012, oversaw this non-routine maintenance, assisted by several individuals who helped with the rigging and lifting of the source holders. The RSO made sure that both shutter mechanisms were locked in the closed position before removal, and confirmed as such with surveys before and during the lift. The RSO ensured that both source holders were lifted with their shutters facing downward, away from any personnel, and had both gauges placed in that orientation into a job box next to the slurry pipes from which they were removed. The job box was then locked closed, and secured to a nearby structural support using a locking chain. The RSO performed additional surveys to confirm that there were no excessive readings on the exterior of the locked job box.

The inspector toured the location where the gauges had been used and were currently stored, a narrow crawlspace at one corner of the slurry pump house. The inspector confirmed that the source holders were still secured from unauthorized access or removal, and that their shutters were still locked in the closed position. The inspector noted maximum readings of around 0.2 milliRoentgen per hour (mR/hr) on accessible surfaces of the source holders and 0.05 mR/hr on accessible surfaces of the job box.

Following the onsite portion of the inspection, the inspector contacted a representative of the gauge manufacturer from whom the RSO received training to confirm that the 40-hour RSO course included several hours of instruction specifically on gauge installation, removal, and other non-routine maintenance.

The inspector determined that the root cause of the violation was a misunderstanding of regulatory requirements for non-routine gauge maintenance. The RSO believed that so long as the gauges were not removed from the crawlspace, these activities did not qualify as removal from service, and were therefore not prohibited.

As corrective actions, the RSO discussed the requirement with the inspector, and committed not to perform any additional non-routine maintenance. On August 11, 2017, the licensee disposed of the gauges via transfer to RAM Services, Inc., who performed the service using its State of Wisconsin license under reciprocity. On August 21, 2017, the licensee prepared a request to terminate the license, and forwarded a copy of the request and its supporting documentation to the inspector.

The NRC normally characterizes the unauthorized conduct of regulated activities such as non-routine gauge maintenance at a Severity Level III in accordance with Section 6.3.C.5 and/or 6.3.C.11 of the Enforcement Policy; however, the agency recognized that the RSO did receive training on non-routine gauge maintenance consistent with what the NRC has deemed acceptable for qualification to perform such activities, and adhered to procedures provided during your training that were consistent with what the NRC would require for authorization to perform such activities. Moreover, there is no indication that any personnel were at risk of exposure to radiation in excess of regulatory limits during the removal of these devices, and during the inspection the RSO demonstrated a satisfactory understanding of the principles procedures and equipment necessary to safely remove these gauges from service. Therefore, this violation was characterized at a Severity Level IV, in accordance with Section 6.3.D.8 of the Enforcement Policy and case-specific mitigating factors.

5. PERSONNEL CONTACTED:

- # Roger Nash, Electrical Engineer – Great Lakes Region, RSO
- # Attended telephonic exit meeting on August 30, 2017

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