NRC FORM 592M
(10-2020)

U.S. NUCLEAR REGULATORY COMMISSION

Materials Inspection Record

1. Licensee Name:	2. Docket Number(s):	3. License Number(s)
Soil and Materials Engineers, Inc.	030-19574	21-17158-02

4. Report Number(s):	5. Date(s) of Inspection:
2021-001	October 19-20, 2021

6. Inspector(s):	7. Program Code(s):	8. Priority:	9. Inspection Guidance Used:
Ryan Craffey	03121	5	IP 87124

10. Licensee Contact Name(s):	11. Licensee E-mail Address:	12. Licensee Telephone Number(s):
Trevor Shaheen - RSO	trevor.shaheen@sme-usa.com	734-454-9900

13. Inspection Type:	14. Locations Inspected:	15. Next Inspection Date (MM/DD/YYYY):
☐ Initial		
☑ Routine ☑ Announced	☑ Main Office ☑ Field Office	10/19/2026 ☑ Normal ☐ Extended
☐ Non-Routine ☐ Unannounced	☑ Temporary Job Site ☐ Remote	☐ Reduced ☐ No change

16. Scope and Observations:

This was an announced routine inspection of an engineering and consulting firm authorized to store portable moisture density gauges containing byproduct material at offices in Michigan and Indiana, and to use them for measuring the physical properties of construction materials at temporary job sites in NRC jurisdiction. At the time of the inspection, the licensee had over a hundred gauges in NRC jurisdiction with at least two stationed at each authorized location (with the exception of Bay City, Michigan, which was pending release at the time of the inspection following the office's relocation to Saginaw) and over 150 individuals authorized to use them. The licensee's RSO was based at the main office in Plymouth.

The inspector toured the main office in Plymouth and satellite offices in Shelby Township and Saginaw, Michigan. All areas were properly posted, and all licensed material was adequately secured. Readings from independent and confirmatory surveys in the vicinity of the gauge storage locations were well below limits to members of the public. Surveys in the vicinity of gauges present were consistent with radiation profiles in the applicable SSDR safety evaluations. All gauges and their transport cases were adequately labeled and in good condition. While in Plymouth, the inspector reviewed the licensee's practices for gauge accountability, verified a selection of the licensee's inventory, and reviewed a selection of records for sealed source leak tests, source rod weld inspections, gauge user training certificates, personnel dosimetry reports, and annual audits of each authorized location.

The inspector also observed the conduct of licensed activities at three temporary job sites in Michigan: near the intersection of 13 Mile and Meadowbrook in Novi, at the Great Lakes National Cemetery in Holly, and at Garner Elementary School in Clio. All users wore assigned dosimetry, implemented adequate ALARA practices, were knowledgeable of radiation protection principles, blocked and braced their gauges for transport, and carried shipping papers and emergency response information in the correct locations. All gauges and transport cases were in good condition. Surveys in the vicinity of these gauges were consistent with the above-mentioned radiation profiles.

During the visit to the job site in Clio, the inspector identified a SLIV violation of 10 CFR 30.34(i). Upon arrival, the inspector located the licensee's vehicle parked unattended on the premises. The inspector found a gauge case in the open bed of the truck, and confirmed via surveys that a gauge was inside. The lid to the case was secured with a lock, a steel cable was wrapped around the top of the case lengthwise, and a chain was wrapped around the top of the case widthwise. Both the cable and the chain were fixed to a mounting frame bolted to the bed of the truck, and both appeared to have been secured with locks. However, when the inspector challenged the locks, the chain's lock opened with minimal resistance. It would not lock closed and was determined to be broken. Therefore the licensee used only one barrier (the locked cable) to secure the gauge in its case against unauthorized removal.

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The root cause of the violation was an oversight; the technician did not challenge the locks after closing them. The poor condition of the lock was a contributing factor. As corrective action, the technician maintained control and constant surveillance of the gauge until returning it to secure storage at the office in Shelby Township, Michigan later that day. The licensee's RSO also sent a memo to all gauge users the following day reminding them of expectations for portable gauge security, including (1) the need to run the cable through all three handles of the transport container; (2) the need to tighten the chain as much as possible; and (3) the need to check both locks frequently and to carry one or two spares at all times.

The inspector also followed up on EN 54883 / NMED 200367. During the course of the inspection, the inspector interviewed the gauge user involved in the incident and reviewed dosimetry reports for the quarter in which the incident occurred. The inspector had no additional findings. This event remains closed.