NRC FORM 592M
(10-2020)

U.S. NUCLEAR REGULATORY COMMISSION

Materials Inspection Record

1. Licensee Name:	2. Docket Number(s):	3. License Number(s)
MidMichigan Health	030-02013	21-01549-02

4. Report Number(s):	5. Date(s) of Inspection:
2022-001	May 10-12, 2022; exit May 20, 2022

6. Inspector(s):	7. Program Code(s):	8. Priority:	9. Inspection Guidance Used:
Ryan Craffey	04822	2	IP 87131, 87132

10. Licensee Contact Name(s):	11. Licensee E-mail Address:	12. Licensee Telephone Number(s):
Victor Hosfeld - RSO	victor.hosfeld@mymichigan.org	989-839-1407

13. Inspection Type:	14. Locations Inspected:	15. Next Inspection Date (MM/DD/YYYY):
☐ Initial	☑ Main Office	☑ Field Office
☑ Routine	☑ Announced	☐ Temporary Job Site	☐ Remote	05/10/2024	☑ Normal	☐ Extended
☐ Non-Routine	☐ Unannounced				☐ Reduced	☐ No change

16. Scope and Observations:

This was a regional medical system authorized to use byproduct material for diagnostic and therapeutic medical purposes at its main campus in Midland, Michigan, and at satellite facilities in Alma, Alpena, Clare, Gladwin, Mount Pleasant, and West Branch. At the radiation oncology department in Midland, the licensee regularly performed GSR (35.1000) and HDR treatments. At the new nuclear medicine department in Midland, three nuclear medicine technologists performed 10-15 diagnostic administrations of radiopharmaceuticals daily, as well as occasional I-131 and Ra-223 therapies. The licensee also began performing Y-90 microspheres therapies in Midland since the last inspection. At the nuclear medicine department in Clare, one nuclear medicine technologist performed 2-6 diagnostic administrations daily. All other satellite facilities were currently active. The licensee maintained and RSC which met quarterly. The licensee also retained the services of a consulting physicist to perform quarterly audits of each nuclear medicine department. The licensee's RSO was based at the radiation oncology department in Midland.

The inspector toured the campus in Midland and the satellite facility in Clare. All areas were adequately posted, and all licensed material was adequately secured. Independent and confirmatory surveys found no residual contamination or exposures to members of the public in excess of regulatory limits. The inspector observed two GSR treatments, one HDR treatment, several diagnostic administrations of radiopharmaceuticals, daily spot checks of the GSR and HDR units, and receipt of packages containing licensed material. The staff also demonstrated and discussed implementation of procedures for Y-90 microsphere and inpatient I-131 therapies. All staff were knowledgeable of radiation protection principles, utilized instrumentation and ALARA practices effectively, and wore personnel dosimetry as assigned. The inspector reviewed a selection of records including RSC minutes, consultant audits, personnel dosimetry reports, GSR and HDR calibration, training, and source exchange documentation, routine nuclear medicine records, reports of spills and misadministrations, and written directives and treatment documentation for a selection of I-131, Ra-223, HDR, and GSR therapies, and all Y-90 therapies to date.

During a review of misadministrations, the inspector noted that the licensee had identified a violation of 10 CFR 35.63(d) at the nuclear medicine department in Midland. On February 15, 2021, a technologist performing a red blood cell tag inadvertently administered 41.9 mCi of Tc-99m, 81% greater than the intend dose of 23.1 mCi. The root cause was human error; the technologist did not notice that the dose calibrator window was still set for Cs-137 from morning QA activities, rather than Tc-99m. Infrequent use of this particular dose calibrator was a contributing factor. As corrective action, the licensee's medical physics consultant performed dose calculations to confirm that the administration did not meet any medical event criteria. The technologist involved was also retrained.

No other violations of NRC safety requirements were identified as a result of this inspection.