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MEMORANDUM FOR: William M. Shaffer, III
New Facility Section, WMUR

FROM: Gregory G. Eadie
Operating Facility Section II, WMUR

SUBJECT: REVIEW OF DOE REPORT NLCO-008EV

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I have reviewed the report prepared for the DOE by NLO, Inc., entitled, "Environmental Surveillance Plan for the Department of Energy's Niagara Falls Storage Site (NFSS), Lewiston, New York," NLCO-008EV (September 9, 1981). This report describes the environmental monitoring and Health Physics programs which are being implemented at NFSS, a site which is used for the storage of low-level radioactive residues. No actual monitoring data was provided in this report.

Environmental Monitoring Program

Radon-222 monitoring on site at NFSS is being conducted by Mound Laboratories by using 12 Passive Environmental Radon Monitors (PERMS). Mound has also placed 30 PERMS throughout the surrounding communities. NLO, Inc. has also installed a more extensive on-site radon-222 monitoring program consisting of 30 sampling points and three quality control points using the Type F Terradex Track Etch device.

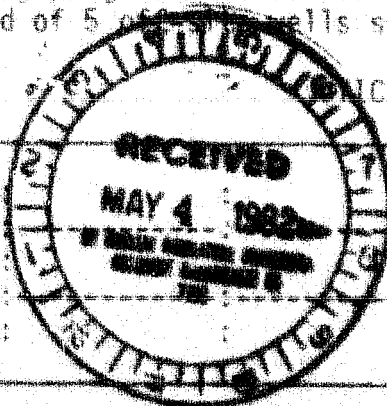
NLO, Inc. stated that airborne particulate resuspension by wind is not a normal concern since all radioactive residues are stored in covered containment and the contaminated areas are stabilized by vegetation. NLO, Inc. also stated that a job specific air monitoring program will be implemented, and the exposed filters will be counted by alpha scintillation (the modified Kusnetz method). NLO, Inc. also stated that source terms at the site will be measured to determine the amounts of radon that are being released by using activated charcoal respirator filters, and determining the radon flux rate.

The present groundwater monitoring program consists of 10 on-site wells sampled on a quarterly basis, and of 5 off-site wells sampled on an

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annual basis. All samples are analyzed for radium-226, gross alpha and gross beta (changed to uranium analysis in June, 1977), and NLO, Inc. also stated that radium-228 analyses were initiated in June, 1977. NLO, Inc. stated that as a part of a recent geo-hydrological investigation of the NFSS site, 47 new wells were installed to upgrade the groundwater monitoring program. Since the summer of 1981, the groundwater monitoring program has been changed so that the water level is measured in all new wells on a monthly basis and after all significant storm events. NLO, Inc. recommended that all new wells and existing NLO wells should be sampled on a monthly basis and analyzed for pH and conductivity. NLO also recommended that quarterly samples should be sent for radiometric/radiochemical analysis from NLO wells and from 14 of the new replacement wells. NLO, Inc. indicated that 3 surface water samples are collected off-site on a quarterly sampling basis. NLO, Inc. stated that water samples will be taken from the drainage ditches before, during and after remedial activities at the site, and samples will be analyzed for uranium-238 and radium-226.

Since previous sediment sampling around the NFSS site indicated that radium-226 in excess of 5pCi/g has migrated off-site, a more extensive sediment sampling program has been established at 11 off-site sampling locations. Analysis will be for U-238, Ra-226, Cs-137, and cations (to determine concentrations of rare earths).

Environmental gamma radiation will be monitored using thermoluminescence dosimeters (TLDs) at 34 on-site locations. Additionally, 4 TLDs will be used as a quality control measure, with sampling frequency for all TLDs on a monthly basis.

Routine soil sampling will not be performed at the NFSS site but on-site soil contamination will be measured using field survey detectors such as G-M or NaI scintillometers. NLO, Inc. stated that such field survey data would be substantiated by laboratory analyses of selected samples.

NLO, Inc. stated that quality control (QC) measures will also be implemented to ensure validity of data resulting from the environmental monitoring program. These measures may include duplicate sampling, sample splitting for analysis at separate facilities, and submission of QC standards for analysis.

With respect to reporting of results of the environmental monitoring program, NLO, Inc. stated that data will be collected on a regular basis and plotted with previous data to allow for comparison and early

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detection of changing trends and perturbations. NLO, Inc. stated that interpretation and reporting of these data should be performed on a semi-annual or annual basis.

Conclusion

Except for the lack of a description of an airborne particulate monitoring program to detect uranium decay chain radionuclides and other present radionuclides such as cesium-137, the environmental monitoring program as described in this report should be adequate.

Health Physics Program

NLO, Inc. described the Health Physics Program which is being implemented during routine operations at NTS. However, the Health Physics concerns for non-routine activities, such as remedial actions, will be addressed by programs written for these activities prior to their initiation. NLO, Inc. provided a general description of the various routine HP Program elements such as: access control, training, personnel monitoring, radiation surveys, decontamination procedures, radioactive materials inventory, QA Programs, and the HP Program's reporting procedures. However, specific program details were not provided and NLO, Inc. generally stated that such details will be determined as required.

Conclusion

The routine Health Physics Program as generally described in this report appears to be acceptable; however, the specific details and written procedures to be used for the implementation of this program should be provided so that a thorough review and final determination of its acceptability may be made.

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