



## An Environmental Restoration Success Story:

# APPLICATION OF THE CONTINGENT REMOVAL ACTION TO OPERATING DOE FACILITIES



IDAHO DEPARTMENT  
OF HEALTH AND WELFARE  
DIVISION OF  
ENVIRONMENTAL  
QUALITY



**INEEL**

Office of Environment, Safety & Health  
Office of Environmental Management

June 1999

***Benefits Achieved at INEEL: Application of Contingent Removal Action accelerates clean-up to take advantage of opportunities for more cost-effective disposal and coordination of operations and remediation projects.***

## INTRODUCTION

Environmental Restoration at the INEEL is governed by an agreement among U.S. DOE, U.S. EPA and IDHW, called the Federal Facility Agreement and Consent Order (FFA/CO). This agreement effectively moved the investigation and cleanup of past releases at the INEEL from a RCRA to a CERCLA process. Under the FFA/CO, the INEEL has been divided into 10 Waste Area Groups (WAGs) for the purpose of facilitating environmental remediation efforts. Each of these WAGs are operating facilities with missions independent from Environmental Restoration.

In a project involving WAG 3, the challenge was to support a \$67M, five year, electrical utility upgrade project which included the excavation of 20,000 lineal feet of ductbank entirely through WAG 3 CERCLA sites. Since the ductbanks were to be installed at three feet below grade, excavations would generate up to 4,500 cubic yards of soil which could not physically be returned to the excavation. Of this total, the expected quantity of soil which would contain radionuclide contamination was unknown, but expected to be significant.

The project team employed the DOE/EPA guidance<sup>1</sup> on developing contingent removal actions. The pre-approved nature of this contingent approach to a non time critical removal action (NTCRA) allowed the project to progress in light of the uncertainty in the expected volume of contaminated material to be generated. Further, the approach was flexible enough to accommodate soils from other areas if it was determined that they met the same removal action objectives. The following sections describe the manner in which the contingent removal action concepts were applied.

## IDENTIFICATION OF EXPECTED CONDITIONS

In order to define the scope of the NTCRA, bounding conditions were determined. The original concept entailed identifying broad classes of soil requiring management. Categories of soil which were included in the scope of the NTCRA are: 1) Existing soil stockpiles being managed in Radioactive Management Areas (RMAs), 2) soils generated by the electrical utility upgrade project, 3) funded projects in the design stage expected to generate excess soil, 4) maintenance activities, both on-going and future, expected to generate excess soil, 5) CERCLA sites in which remediation could be expedited prior to signing of the ROD and 6) investigation derived wastes. The common factor among these diverse categories of soil was that the expected contaminants of concern were low-level radionuclides. While the scope was intended to address soils that were thought to contain low level radionuclide contamination only, some degree of uncertainty existed in both nature and extent of contamination (e.g., presence of RCRA hazardous wastes). Even though INEEL has had a complex and varied operational history since 1949, it was determined that it would be possible to detect unexpected hazardous constituents during confirmatory sampling.

The Operable Units (OUs) at WAG 3 were evaluated based on the size of various sites, location of the release, etc. Through discussions with facility management, existing soil piles and construction projects expected to generate low level radionuclide contaminated soils were identified.

## EVALUATING REMEDIATION ALTERNATIVES AGAINST EXPECTED CONDITIONS AND DEVIATIONS

The chosen remedial alternative was on-site disposal at either of two available facilities. One facility required waste containerization, tracking, and container maintenance. The other facility was a CERCLA consolidation unit open for disposal of low level radioactive soils to fill an open basin prior to application of a final surface barrier. Due to the uncertainties in actual soil contamination, the flexibility associated with having two potential disposal units was retained. If the waste acceptance criteria of the more cost effective disposal facility (i.e., CERCLA consolidation unit) could not be met, some or all of the soils could be disposed at the second facility.

Two of the CERCLA sites which were included in the NTCRA based on planned disturbance by construction, were thought to potentially contain kerosene and petroleum products, in addition to radionuclide contamination. Waste management options were identified for these sites in the event that analysis revealed the presence of kerosene or related constituents above regulatory limits or cleanup goals, since this would preclude the soil from disposal in the identified areas.

## ESTABLISHING CONTINGENCY PLANS FOR EXPECTED DEVIATIONS

The scope of the removal action was focused on radioactively contaminated soils. Therefore, for a site to be included in the scope, process knowledge would have to indicate that the soils have radioactive contamination only. However, in order to account for the possibility that RCRA hazardous waste would be encountered after action was initiated, a table of "contingent" applicable or relevant and appropriate requirements (ARARs) was developed. ARARs were developed for the *expected* presence of low-level radioactivity as well as *contingent* requirements for hazardous waste (i.e., RCRA regulations) which pertain to the removal action. If soils containing RCRA hazardous waste were encountered, the contingent ARARs would automatically become effective in addition to those for radionuclides. By negotiating both sets of ARARs with the state and EPA prior to actual removal work, a contingency plan was in place, should it be required.

## LESSONS LEARNED

One of the difficult aspects of using the NTCRA process to support construction projects was the attempt to conform the NTCRA process to milestones which had been previously established,

without regard to the CERCLA process. It was imperative not to delay the planned start of construction for the electrical utility upgrade project.

A schedule was developed which included State and EPA participation even though the NTCRA is outside of the FFA/CO and does not require agency approval. This approach was intended to foster good relations between DOE-ID, State and EPA and to limit the number and severity of agency comments received during the public comment period.

Additionally, Removal Action Sampling and Analysis Plans (SAPs) require EPA review, per NCP section 300.415E4iia, and a SAP was an integral part of the NTCRA documentation. Throughout the entire process, the State and EPA were kept informed and encouraged to review draft documentation along with LMITCO and DOE-ID reviews. As a result of this coordination and open communication between the parties, the draft distributed for public comment included input from the State and EPA. An extension to the thirty day public comment period would have caused an unacceptable delay to the planned start of construction of the electrical utility upgrade project. Therefore, it was imperative that actions be taken to minimize the possibility of a schedule extension for reviews, as well as document revisions which would also delay finalization of the EE/CA.

One setback experienced by the project team was when two soil piles and 565 boxes which were included in the original scope were removed from the NTCRA due to the suspicion that they may contain RCRA listed wastes. Since this issue could not be resolved in a timely manner, and rather than risk the approval of the entire NTCRA, these soils were removed from the scope of the NTCRA. This descoping caused almost every section of the EE/CA to be rewritten and the cost estimate to be revised as well. This experience illustrates the importance of accurate problem definition for all sites to be included in a NTCRA. In addition, it can be problematic to attempt an innovative regulatory approach on a tight schedule. Schedule contingency should have been incorporated to account for the many inherent uncertainties.

Another difficulty encountered when Environmental Restoration and Facility Operations cooperated for funding and implementation of the NTCRA was that operations personnel were unfamiliar with CERCLA requirements. Enhanced communications and training in CERCLA requirements, as they apply to a particular DOE site, is recommended.

## CONCLUSION

The organizational approach of Environmental Restoration and Facility Operations cooperating and pooling resources to use the NTCRA process to solve facility specific problems has been successful. ER funded the development of the NTCRA documentation and addressing public comments (with EM-40 funding), while Facility Operations funded and accepted responsibility for project implementation and compliance (with EM-60 funding). Close coordination among the various participants was required.

To date, the entire 20,000 lineal feet of electrical ductbank have been successfully excavated. Soils have been sampled, analyzed, and segregated as established in the EE/CA document. Application of the CERCLA-based contingent removal action framework allowed construction to continue without delay since in-process monitoring could be compared to pre-established decision criteria. Additionally, this approach assured that regulatory compliance was maintained due the early involvement of the regulatory agencies, and the "pre-approval" aspect of the response strategy. Several additional construction and maintenance projects have been completed within the boundaries of the NTCRA, and 270 cubic yards of soils have been transported for disposal. Recent approval has been received to perform a similar NTCRA at the other INEEL WAGs and an analogous approach is planned for that project. This technique would be easily applied to other DOE sites where facility waste issues may be addressed under a CERCLA program with a NTCRA.

## REFERENCES

1. DOE/EPA Fact Sheet: "Expediting Cleanup Through Contingent Removal Actions", March 1997; DOE/EH/(CERCLA)-003.  
(<http://tis.eh.doe.gov/oepa/guidance/cercla/cra7.pdf>)

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*DOE is planning on supporting additional applications of contingent removal actions, and will be reviewing requests from sites interested in participating in this program. In addition, limited HQ technical assistance is available for other types of streamlining projects. For further information please contact Richard Dailey, EH-413 at (202) 586-7117 or Steve Golian, EM-43 at (301) 903-7791.*

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