

PRELIMINARY DRAFT PROPOSED PLAN AND DRAFT MODIFICATION OF
COLORADO HAZARDOUS WASTE PERMIT
FOR ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
OPERABLE UNIT 15: INSIDE BUILDING CLOSURES

United States Department
of Energy (DOE)

Jefferson County, Colorado

October 14, 1994

DOE Announces Preferred Alternative for OUI5, Inside Building Closures

The U.S. Department of Energy (DOE) has announced its preferred alternative to address the Inside Building Closures of the Rocky Flats Environmental Technology Site (RFETS) (formerly known as the Rocky Flats Plant), located north of Golden, Colorado in Jefferson County. DOE is the lead agency for the cleanup at the site.

Cleanup at RFETS is being administered under both the *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*¹ of 1980, as amended by the *Superfund Amendments and Reauthorization Act* of 1986, and the *Resource Conservation and Recovery Act (RCRA)*, as implemented by the Colorado Hazardous Waste Act and the Rocky Flats Hazardous Waste Permit. The Permit was issued by the Colorado Department of Public Health and Environment (CDPHE) in accordance with the Colorado Hazardous Waste Regulations (CHWR), 6 CCR 1007-3. The specific requirements and responsibilities for RFETS cleanup are currently outlined in the January 22, 1991 *Interagency Agreement (IAG)* between DOE, the U.S Environmental Protection Agency (EPA) and CDPHE.

The preferred remedy is the "No Action" alternative for *Individual Hazardous Substance Sites (IHSSs)* 178, 179, 180, 204, 211 and 217 which compose *Operable Unit 15 (OU15)*. In accordance with the IAG and EPA guidance, a no action decision is appropriate for a site or operable unit that is already in a *protective state* (i.e., the site or operable unit poses no current or potential threat to human health or the environment). There are no documented releases from the OU15 IHSSs and no identified routes for contaminants to migrate out of the OU15 buildings. In addition, the IHSSs are maintained in a protective state for the individuals who work in and around them.

All interested parties are encouraged to read and comment on this Proposed Plan and Draft Hazardous Waste Permit Modification, and the Final Phase I *RCRA Facility Investigation/Remedial Investigation (RFI/RI)* Report document, prepared by DOE in cooperation with EPA and CDPHE. These documents describe the history and status of the OU15 IHSSs and are available for public review at the information repositories listed on page 2.

DOE, EPA and CDPHE will make the final remedy selection and a decision on the Hazardous Waste Permit Modification, only after considering regulatory agency, community and other stakeholder comments. A summary of responses to all comments will be made available to the public. Following public comment, DOE will publish a *Record of Decision* and CDPHE will issue a Final Hazardous Waste Permit Modification responding to all comments received and documenting the rationale for the decision.

This Proposed Plan is prepared in fulfillment of DOE's delegated public participation responsibilities as the lead agency under Sections 113 (k) and 117 (a) of CERCLA. This Draft Permit Modification, per Executive Order 12580, is prepared in fulfillment of CDPHE's public participation responsibilities under Section 100.60 of the CHWR, and regards modification of the Hazardous Waste Permit to incorporate remedial action decisions at RFETS.

The Proposed Plan

This Proposed Plan represents the preferred alternative for the Inside Building Closures. This Plan applies only to Operable Unit 15.

¹Words shown in *italics* on the first mention are defined in the glossary at the end of this Proposed Plan.

MARK YOUR CALENDAR: OPPORTUNITIES FOR PUBLIC INVOLVEMENT

Public Comment Period:

Public Hearing:

Location:

Time:

Send Comments To:

DOE's External Affairs Office
P.O. Box 928, Golden, CO 80402-0928

W. Carl Spreng, Geologist
ph: (303) 692-3358
Colorado Department of Public
Health and Environment/HMWMD-HWC-B2
4300 Cherry Creek Drive South
Denver, CO 80222-1530

Information Repositories

The Proposed Plan, the RFI/RI report and other documents are available at information repositories at the following locations:

Rocky Flats Public Reading Room
Front Range Community College
Level B
3645 W. 112th Avenue
Westminster, CO 80030

Colorado Department of Public
Health and Environment
Hazardous Materials and Waste
Management Division - Bldg. B2
4300 Cherry Creek Drive South
Denver, CO 80222-1530

Citizens Advisory Board
9035 N. Wadsworth Parkway
Suite 2250
Westminster, CO 80021

Standley Lake Library
8485 Kipling Street
Arvada, CO 80005

U.S. Environmental Protection Agency
Superfund Documents Center
5th Floor
999 18th Street
Denver, CO 80202-2405

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SITE BACKGROUND

RFETS is located in northern Jefferson County, Colorado (Figure 1). RFETS occupies approximately 6,550 acres of federal land, and is a government-owned and contractor-operated facility that is part of the nationwide nuclear weapons production complex. RFETS' primary mission was formerly to produce metal components for nuclear weapons from plutonium, uranium and non-radioactive metals. Its current mission is to manage wastes and materials, and to cleanup and convert the Rocky Flats site to beneficial use in a manner that is environmentally safe, socially responsible, physically secure and cost-effective.

PUBLIC INVOLVEMENT PROCESS

A public comment period will be held concurrently for this Proposed Plan and Draft Permit Modification. This public comment period will be from to . A public hearing will be held on . Comments on the Proposed Plan and Draft Permit Modification may be submitted orally or in writing at the public hearing; or written comments, postmarked no later than , can be sent to the addressees listed on page 2.

Upon timely request, the comment period may be extended. Such a request should be submitted in writing to DOE, postmarked no later than . FAILURE TO RAISE AN ISSUE OR PROVIDE INFORMATION DURING THE PUBLIC COMMENT PERIOD MAY PREVENT YOU FROM RAISING THAT ISSUE OR SUBMITTING SUCH INFORMATION IN AN APPEAL OF THE AGENCIES' FINAL DECISION.

Historical waste handling practices involved on-site storage, treatment, and disposal of hazardous, low-level radioactive, and mixed wastes. Most plant structures are located within the primary RFETS site, which occupies approximately 400 acres. This area is surrounded by a buffer zone of approximately 6,150 acres. Due to the complex nature of the site, RFETS has been divided into sixteen Operable Units (OUs). The Inside Building Closures, OU15, consists of six IHSSs, and is the subject of this Proposed Plan.

OU15 was originally composed of eight IHSSs; however, IHSSs 212 and 215 are no longer included as part of the OU. The closure of IHSS 212 is now addressed in Part VIII of the RFETS RCRA Mixed Residue Permit Modification. IHSS 215 was transferred to Operable Unit 9 (OU9) and has already been included in the Phase I RFI/RI for OU9. The six remaining OU15 IHSSs are:

- IHSS 178 - Building 881, Drum Storage Area (Room 165);
- IHSS 179 - Building 865, Drum Storage Area (Room 145);
- IHSS 180 - Building 883, Drum Storage Area (Room 104);
- IHSS 204 - Building 447, RCRA Unit 45, Original Uranium Chip Roaster (Rooms 32 and 502);
- IHSS 211 - Building 881, RCRA Unit 26, Drum Storage Area (Room 266B); and
- IHSS 217 - Building 881, RCRA Unit 32, Cyanide Bench Scale Treatment (Room 131C).

The following is a summary of the physical description and operational history of each hazardous substance site.

IHSS 178, Building 881, Drum Storage Area (Room 165). IHSS 178, which has a maximum storage capacity of five 55-gallon drums, was first used in 1953 when Building 881 operations began. The IHSS is demarcated by two painted circles, each approximately four feet in diameter. The drums stored in the IHSS contained wastes contaminated with solvents and possibly low-level radioactivity. Routine visual monitoring was conducted during the period of operation.

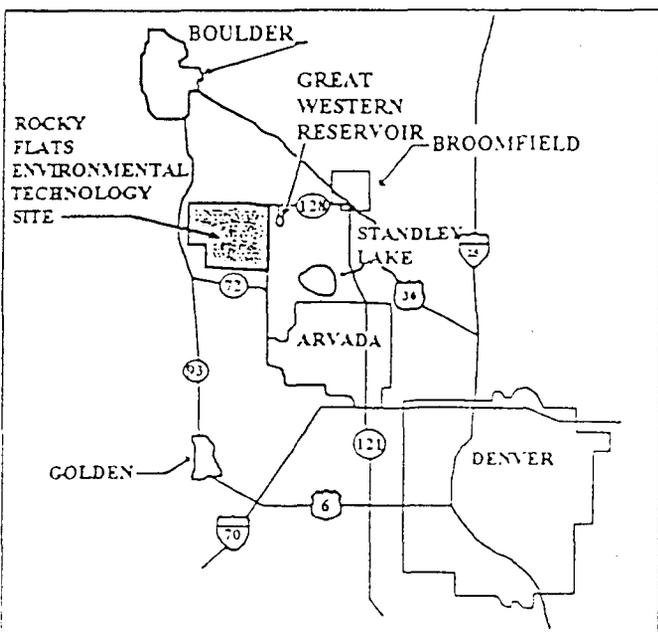


Figure 1
Rocky Flats Environmental Technology Site and Vicinity

IHSS 179, Building 865, Drum Storage Area (Room 145). IHSS 179, which has a maximum storage capacity of ten 55-gallon drums, was first used for drum storage in 1970. The dimensions of the IHSS are approximately 8 feet by 12 feet. Drums stored in the IHSS contained oils, chlorinated solvents, radioactive waste and possibly beryllium, and were monitored routinely for spills and releases.

IHSS 180, Building 883, Drum Storage Area (Room 104). IHSS 180, which has a maximum storage capacity of thirty 55-gallon drums, measures 10 feet by 16 feet, and was first used for drum storage in 1981. Drums stored in the IHSS contained oils contaminated with solvents, uranium and beryllium. Visual monitoring of the storage area was conducted periodically.

IHSS 204, Building 447, RCRA Unit 45, Original Uranium Chip Roaster (Rooms 32 and 502). IHSS 204, the Original Uranium Chip Roaster, was used historically to oxidize elemental uranium chips coated with small amounts of oils and coolants to uranium oxide. The unit is cylindrical with a diameter of 5 feet 6 inches and a height of 7 feet 4 inches. The inlet for the unit is located in Room 502, and the outlet is located directly downstairs in Room 32. No hazardous constituents have been treated in this unit since January 1988, when the uranium chips processed in the unit ceased to be coated with oils and coolants.

IHSS 211, Building 881, RCRA Unit 26, Drum Storage Area (Room 266B). IHSS 211, which has a maximum storage capacity of twenty-nine 55-gallon drums, was first used as a drum storage area in 1981. The dimensions of the IHSS are approximately 10 feet by 20 feet. The wastes stored in the unit have historically included low-level combustibles (rags, wipes, etc.), metals, glass, and materials which contained solvents and/or metals generated by laboratories in the building.

IHSS 217, Building 881, RCRA Unit 32, Cyanide Bench Scale Treatment (Room 131C). IHSS 217 consists of a 4 feet by 5 feet painted metal fume hood and laboratory table, three 4-liter polyethylene bottles, a glass beaker, and a chlorine-specific ion electrode. The unit was used as a bench scale treatment process to convert cyanide to cyanate. Aqueous cyanide solutions were transferred to the unit for analysis of cyanide content using a cyanide still. Wastes generated from this analysis were collected in the three 4-liter polyethylene bottles and stored in the steel fume hood of the unit. The cyanide solution was treated in one of the 4-liter bottles and then transferred via the process waste line system to the central liquid waste treatment facility in Building 374 for further treatment.

The risks associated with the OU15 IHSSs were characterized as part of the OU15 RFI/RI, which was completed in accordance with the requirements presented in the IAG and specifically identified in the Final Phase I RFI/RI Work Plan for OU15. The RFI/RI focused on two issues: first, determining if releases had occurred from the OU15 IHSSs to outdoor locations where people and ecological receptors could be affected; and second, evaluating if unacceptable levels of risk exist to persons working inside the buildings. For each IHSS, the investigations involved reviewing historical information, conducting visual inspections, and completing sampling and analyses for surface contamination. A detailed discussion of the methods and results is presented in the Final Phase I RFI/RI Report.

In order to determine if releases to the environment had occurred from the OU15 IHSSs, historical information on waste management practices in the IHSSs was first reviewed. Visual inspections of each IHSS were then completed. These inspections focused on identifying evidence of spills or releases and assessing if potential routes existed for the migration of contaminants from the IHSSs to outdoor areas. Finally, samples were collected in each IHSS and analyzed to characterize the presence or absence of hazardous and radiological constituents associated with the IHSSs.

The results of the sampling and analysis were compared to a set of protective standards approved as *Applicable or Relevant and Appropriate Requirements (ARARs)* in the Final Phase I RFI/RI Work Plan for OU15. ARARs were identified for both hazardous (RCRA-regulated) constituents (e.g., spent solvents, metals) and radionuclides.

The ARARs used to evaluate hazardous constituents were the RCRA clean closure performance standards (6 CCR 1007-3, Part 265.111). They specify that the IHSSs must be closed in a manner that minimizes the need for further maintenance, and controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of contaminants from the IHSS. The clean closure performance standards were applied in quantifiable terms by specifying that the samples collected in each IHSS demonstrate non-detectable levels of the hazardous constituents associated with the wastes that were managed in those IHSSs.

The ARARs used to evaluate radionuclides were based on Occupational Safety and Health Act (OSHA) worker protection standards for ionizing radiation. The specific standards are listed in the Code of Federal Regulations (CFR) and DOE orders, and are presented below:

- 10 CFR 20, App. B: Protection against radiation;
- 10 CFR 835: Occupational radiation protection;
- 29 CFR 1910.96 (b): Exposure of individuals to radiation in restricted areas;
- 29 CFR 1910.96 (c): Exposure to airborne radioactive material;
- 29 CFR 1910.96 (l): Notification of incidents;
- DOE Order 5400.5: Radiation protection of the public and the environment; and
- DOE Order 5480.11: Radiation protection for occupational workers.

The following is a summary of the risks associated with each IHSS.

IHSS 178, Building 881, Drum Storage Area (Room 165). The results of the sampling and analysis, along with the review of historical records and the visual inspections, indicate that there have not been releases of either hazardous constituents or radiological contamination to the environment external to IHSS 178. Conditions at the IHSS also eliminate the threat of post-closure releases to the environment from the IHSS. Therefore, IHSS 178 does not pose a risk to human populations and other ecological receptors outside Building 881.

The sampling and analytical results also demonstrate that IHSS 178 is in compliance with the ARARs specified for both hazardous constituents and radionuclides. No hazardous constituents associated with the management of wastes in IHSS 178 were detected in the samples from the IHSS. In addition, IHSS 178 meets the OSHA worker radiation protection standards and poses no unacceptable risk to workers.

IHSS 179, Building 865, Drum Storage Area (Room 145). The results of the sampling and analysis, along with the review of historical records and the visual inspections, indicate that there have not been releases of either hazardous constituents or radiological contamination to the environment external to IHSS 179. Conditions at the IHSS also eliminate the threat of post-closure releases to the environment from the IHSS. Therefore, IHSS 179 does not pose a risk to human populations and other ecological receptors outside Building 865.

The sampling and analytical results also demonstrate that IHSS 179 is in compliance with the ARARs specified for both

hazardous constituents and radionuclides. No hazardous constituents associated with the management of wastes in IHSS 179 were detected in the samples from the IHSS. In addition, IHSS 179 meets the OSHA worker radiation protection standards and poses no unacceptable risk to workers.

IHSS 180, Building 883, Drum Storage Area (Room 104). The results of the sampling and analysis, along with the review of historical records and the visual inspections, indicate that there have not been releases of either hazardous constituents or radiological contamination to the environment external to IHSS 180. Conditions at the IHSS also eliminate the threat of post-closure releases to the environment from the IHSS. Therefore, IHSS 180 does not pose a risk to human populations and other ecological receptors outside Building 883.

The sampling and analytical results also demonstrate that IHSS 180 is in compliance with the ARARs specified for both hazardous constituents and radionuclides. No hazardous constituents associated with the management of wastes in IHSS 180 were detected in the samples from the IHSS. In addition, IHSS 180 meets the OSHA worker radiation protection standards and poses no unacceptable risk to workers.

IHSS 204, Building 447, RCRA Unit 45, Original Uranium Chip Roaster (Rooms 32 and 502). The results of the sampling and analysis, along with the review of historical records and the visual inspections, indicate that there have not been releases of either hazardous constituents or radiological contamination to the environment external to IHSS 204. Conditions and controls at the IHSS also eliminate the threat of post-closure releases to the environment from the IHSS. Therefore, IHSS 204 does not pose a risk to human populations and other ecological receptors outside Building 447.

The sampling and analytical results also demonstrate that IHSS 204 is in compliance with the ARARs specified for both hazardous constituents and radionuclides. No hazardous constituents associated with the management of wastes in IHSS 204 were detected in the samples from the IHSS. In addition, IHSS 204 meets the OSHA worker radiation protection standards by being maintained in a protective state for workers in accordance with existing OSHA standards and the DOE orders that specifically govern operations and worker exposures at DOE facilities.

For IHSS 204, protection of workers is in part accomplished through the procedures and restrictions developed for radiological work areas. The IHSS is located in a Radiologically Controlled Area (RCA), which is defined as an area to which access is controlled in order to protect individuals from exposure to radiation and/or radioactive materials. Specific requirements apply for individuals entering and working in RCAs, and encompass training, access control, protective clothing, and radiation monitoring and dose limits. They are selected and implemented for each area based on the level of contamination and hazards present.

The controls necessary to protect individuals from occupational exposures in work areas at RFETS are continuously reviewed and modified as needed, based on changing requirements and conditions in the work areas. This enables RFETS to maintain areas, such as IHSS 204, in a protective state for workers.

IHSS 211, Building 881, RCRA Unit 26, Drum Storage Area (Room 266B). The results of the sampling and analysis, along with the review of historical records and the visual inspections, indicate that there have not been releases of either hazardous constituents or radiological contamination to the environment external to IHSS 211. Conditions at the IHSS also eliminate the threat of post-closure releases to the environment from the IHSS. Therefore, IHSS 211 does not pose a risk to human populations and other ecological receptors outside Building 881.

The sampling and analytical results also demonstrate that IHSS 211 is in compliance with the ARARs specified for both hazardous constituents and radionuclides. No hazardous constituents associated with the management of wastes in IHSS 211 were detected in the samples from the IHSS. In addition, IHSS 211 meets the OSHA worker radiation protection standards and poses no unacceptable risk to workers.

IHSS 217, Building 881, RCRA Unit 32, Cyanide Bench Scale Treatment (Room 131C). The results of the sampling and analysis, along with the review of historical records and the visual inspections, indicate that there have not been releases of either hazardous constituents or radiological contamination to the environment external to IHSS 217. Conditions at the IHSS also eliminate the threat of post-closure releases to the environment from the IHSS. Therefore, IHSS 217 does not pose a risk to human populations and other ecological receptors outside Building 881.

The sampling and analytical results also demonstrate that IHSS 217 is in compliance with the ARARs specified for both hazardous constituents and radionuclides. No hazardous constituents associated with the management of wastes in IHSS 217 were detected in the samples from the IHSS. In addition, IHSS 217 meets the OSHA worker radiation protection standards and poses no unacceptable risk to workers.

SUMMARY OF REMEDIAL ALTERNATIVE

The decision for a "No Action" alternative for IHSSs 178, 179, 180, 204, 211 and 217 of OU15, the Inside Building Closures, was based upon the *National Oil and Hazardous Substances Contingency Plan* which provides for the selection of a No Action alternative when a site or OU is already in a protective state. The evaluation of data and associated risk

presented in the Final Phase I RFI RI Report determined that the OU15 IHSSs are currently in a protective state. The IHSSs pose no risk to human populations and the environment outside of the OU15 buildings and are maintained in a protective state for workers inside the buildings. IHSSs 178, 179, 180, 211 and 217 pose no unacceptable risk to workers based on the conditions at the IHSSs. IHSS 204 is maintained in a protective state for workers based on the controls implemented in accordance with OSHA and DOE requirements.

GLOSSARY

Applicable or Relevant and Appropriate Requirements (ARARs): Media-specific (e.g., soil, water) concentration limits or other standards developed for a variety of contaminants including hazardous and radioactive constituents. ARARs are based on an evaluation of several factors including land use, potentially exposed populations, and numerous state and federal regulations and guidance documents.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): A law passed in 1980 that establishes a program to identify abandoned hazardous waste sites, ensures that they are cleaned up, evaluates damages to natural resources, and creates claims procedures for parties who cleaned up the sites.

Individual Hazardous Substance Site (IHSS): An area which is identified for investigation as a result of previous operations and disposal practices.

Interagency Agreement (IAG): A document prepared by representatives from DOE, EPA and CDPHE which presents the objectives and general protocols for addressing the cleanup or evaluation of each of the operable units at the Rocky Flats Environmental Technology Site.

Mixed Waste: Waste that contains both hazardous constituents and radioactive contaminants.

National Oil and Hazardous Substances Contingency Plan: Regulations (40 CFR Part 300) that implement the requirements of CERCLA.

Operable Unit (OU): A term used to describe a certain portion of a CERCLA site. An operable unit may be established based on a particular type of contamination, contaminated media (e.g., soil, water), source of contamination, and/or geographical location.

Protective State: In compliance with relevant State and Federal requirements for protection of public health and the environment.

Record of Decision: A public decision document that presents the cleanup alternative(s) selected for a CERCLA site. It is based on information from the Remedial Investigation and Feasibility Study, public comments, and community concerns.

RCRA Facility Investigation/Remedial Investigation (RFI/RI): An environmental and site impacts study conducted to satisfy the requirements of RCRA and CERCLA.

Resource Conservation and Recovery Act (RCRA): A law designed by the U.S. Congress to require the "cradle-to-grave" management of hazardous waste. CDPHE, through the Hazardous Materials and Waste Management Division, implements RCRA in Colorado.

Risk: The likelihood of an adverse effect on the health of a human or ecological population as a result of exposure to chemical or radiological constituents.

Superfund Amendments and Reauthorization Act: Modifications to CERCLA enacted on October 17, 1986.

If you did not receive this Proposed Plan in the mail and would like to be included in the mailing list for future information, please mail this completed form to:

DOE's External Affairs Office
P.O. Box 928
Golden, CO 80402-0928

or

W. Carl Spreng, Geologist
Colorado Department of Public
Health and Environment/HMWMD-HWC-B2
4300 Cherry Creek Drive South
Denver, CO 80222-1530

Name _____

Address _____

Affiliation (if any) _____

Phone Number _____