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123 DEMOLITION PROJECT OBSERVATIONS

1. The Quick Time Approach to Project Execution is Inefficient.

The quick time approach to the project management was applied without apparent appreciation for regulatory and client review times. This approach resulted in unnecessary contractor and subcontractor frustration. The review process is a part of project execution. Failing to recognize this fact resulted in unnecessary cost for personnel and equipment readied and awaiting authorization to proceed even before the paperwork was presented for review. Announcing that the reviewers of complex documents are given one or two days and activating the follow-on work is perceived as pressuring the reviewers for favorable action. The attempt to hurry the project often found project personnel ready to work but unable to do so because other precursor activities had not been completed. A more controlled approach is likely to be more efficient.

Premature scheduling of work had a negative impact on the demolition contractor, who indicated that he was behind schedule on other jobs because of delays at the Rocky Flats Environmental Technology Site (Site). The demolition contractor bid the job as one continuous activity, but the work was authorized in a piecemeal manner. This contractor was mobilized on April 6, 1998, and did not begin demolition until late in the day on April 28, 1998. The limited demolition approved was completed by May 8, 1998, and the rest of the demolition was approved and authorized on May 13, 1998. Demolition using the heavy equipment was completed on May 19, 1998. Costs were incurred unnecessarily.

The failure of management to have Radiological Control Technicians (RCT) and operating radiation detection instruments available contributed to schedule delays. When the final radiation surveys were initiated, there was a shortage of operating radiation detection instruments. A program of locating instruments and making them available was instituted when the instrument shortage became apparent. The lack of RCTs working at the job site impacted waste operations, the survey of equipment, and the final radiation survey of the facility. It was frequently stated that the final radiation survey would be conducted around the clock in order to finish the survey quickly, yet no radiation monitoring personnel were observed in the building during the hours of 8 a.m. to 5 p.m. on a number of days when the announced program was "rad survey conducted around the clock with three shifts." The demolition phase waited approximately one month for the completion of final radiation surveys. In this case, the quick time approach was not implemented, only discussed.

The Environmental Readiness Review was performed as a series of Environmental Readiness Evaluations (ERE) followed by mini-decisions on pre-start findings from one

of the series of EREs. The reasons were failure to have necessary documentation prepared in advance and to expedite the performance of the project. The contractor did not provide a concise demonstration of readiness, even of the three sub-parts. The approach stretched out the ERE process for this project from September 1997 to April 1998.

Performing final surveys in parallel with other Decontamination and Decommissioning (D&D) activities introduces inefficiencies into the final survey process. A stronger isolation and control program is needed when decontamination work is still in progress. The need to maintain certain building services and systems in operation limits area accessibility for surveys, increases the likelihood of cross contamination, and creates additional safety concerns. The presence and movement of radioactive material may interfere with survey measurements, requiring a later re-survey.

The decision to discontinue attempts to clean close sump 125 under Resource Conservation and Recovery Act (RCRA) procedures after one rinse cycle rather clean it further is an example of expediting the completion of the demolition phase while incurring additional future costs. The sump was filled with gravel and capped with concrete. It could have been washed and sampled again several times. If the rinsate did not exhibit contamination, the sump would have been clean closed and no future study or remediation would be required for it. Filling and capping it deferred remediation, and probably incurred greater total costs.

The decision to remove the asbestos-containing wall board as low-level radiation waste in order to expedite the final radiation surveys was ineffective. The final surveys continued for two months afterward. No time was gained, and significantly higher disposal costs resulted.

The decision to defer scabbling in former Room 109 in order to expedite asbestos abatement resulted in additional effort to construct containment after the interior walls were removed as part of asbestos abatement.

The D&D project activities could be performed as a number of sequential steps. These activities should be performed separately except for waste management. Step 1 should be completed before Step 2 is initiated, and so forth. When parallel execution is attempted the activities become intertwined, and either rework or work force inactivity results. For instance, characterization of the entire interior when the equipment was removed would have eliminated a number of subsequent radiation surveys. Remediating contaminated concrete while the interior walls were still up could have eliminated a portion of the cost for construction of containment after the walls were gone. A number of rooms were surveyed at least twice during the several attempts at final radiation surveys.

The separable suggested steps are:

1. Building Turnover & Preparation
   Vacate building
   Transfer management responsibility
   Continue necessary building support functions
   Remove remaining equipment and property with value
   Dispose of such property properly

2. Facility Decommissioning Planning
   Characterize contamination
Plan decommissioning

3. Facility Decommissioning Execution
   Strip out all remaining equipment, fixtures, and interior distribution systems as waste while performing decontamination process control characterization
Decontaminate structure (floor, walls, ceilings, sumps)

4. Facility Demolition
   Final radiation survey of bare-walls facility
Demolition Close out

5. Waste Management
   Concurrent waste management
   with characterization leading to
   proper segregation by waste type
   packaging for immediate disposal
   shipping as soon as practicible

2. At the job site, health and safety considerations were always first.

Throughout the conduct of this project, the entire organization exhibited dedication to safe work practices. Worker safety and health were considered before any activity was initiated. When an unexpected condition was found, field management stopped work and assessed the situation. Work was not resumed until a safe course was selected. When individuals were negligent in their personal activities on the job site, management was swift to identify and deal with the omissions.

3. The building characterization was not adequate. Process knowledge and a building walk through *while the building was still performing its long term use* were not adequate to plan, schedule, or

estimate cost.

This approach by the project team resulted in a minimal characterization. In fact, information provided by Rocky Flats Field Office (RFFO) personnel who worked in Building 123 over a number of years did not impact project planning. As Building 123 work progressed, discoveries of radiological contamination were made that had not been anticipated by the project planners. These discoveries affected the project cost and scheduled performance of Building 123 D&D.

The initial characterization was more of a scoping survey. Measurements should be taken to establish the location and extent of contamination in order to guide the planning for decontamination. After all the equipment, cabinets, process piping, and duct work were stripped out another, more detailed, characterization survey should have been performed prior to the final survey. This would have identified elevated areas so that remediation could have been dealt with in a systematic fashion. The final survey could then have been accomplished without so much back tracking.

The Millinnium survey instrument used in the final survey for the north and west wings offers promise for more efficient radiation measurements in terms of both cost and schedule. If all surface obstructions are removed so that flat surfaces are surveyed, the instrument can measure large areas efficiently and generate data for reports without major clerical compilation time. The use of the instrument needs to be incorporated in the project planning process. The final radiation survey plan should be predicated on its use. Surfaces should be prepared for Millennium use during strip out. If process waste drain stubs were removed during remediation, the survey effort could be made more efficient.

4. The execution of radiation control activities, especially the final radiation survey, were disjointed and lacked effective management.

An adequate number of RFFO and Kaiser-Hill (K-H) personnel should be assigned to oversee radiological operations for D&D projects. These personnel should be trained in radiological operations procedures, including final survey documents and procedures. They should meet periodically to promote consistency in reviews.

Contractor Radiological Engineering personnel need to provide more effective support to field activities and real time oversight throughout the project, particularly in the early phases.

Contractor Radiological Operations management personnel (above Radiological Control Technician supervisors) need to provide more oversight of daily activities using Management by Walking Around principles. Oversight personnel need to ensure that they do not get bogged down with paperwork and administrative duties that interfere with being in the field. Management presence in the field will head off many problems

and can give early indication of progress and emerging issues.

Project schedules should include adequate time for initial and final characterization surveys. There was insufficient time allotted in the project schedule for Rocky Mountain Remediation Services' (RMRS) internal review of final survey reports, for the K-H independent review, and client and regulator review.

No RCT first line supervision was present during the first months of project execution, resulting in lack of RCT direction and inefficient use of RCT resources.

RCT work space was not adequate for performance of this project. A larger work space should be provided. RCT supervision and Radiological Engineering office space should be established adjacent to the RCT work space. This co-location would allow open lines of communication between parties, and more efficient means of identifying and resolving emerging issues.

The project was plagued by a shortage of radiation monitoring instruments until its latter phases. An instrument management data base should be established whereby instruments are tracked as operable, inoperable, sent out for repair, etc. The data base should also contain information on the number and type of instruments needed for planned future activities.

5. Independent Verification is needed for D&D projects.

The final survey effort is the culmination of the entire D&D process. The final report must be a document that the RFFO can have confidence in and can defend in the future. There should be a demonstrable Quality Assurance (QA) program in place to document the final survey activities.

Until such time as a strong, independent on-site QA presence is demonstrated, an off-site independent verification contractor should be used in parallel with D&D project execution. At least five percent of the final survey measurements should be repeated by an independent survey team. Procedures, survey instrumentation, and information gathered should all be evaluated by this team. The team should be involved from the outset, reviewing final survey plans, implementing procedures, instrument calibrations, response checks, and use. Side-by-side measurements should be taken early in the project to instill confidence in subsequent measurements. Project schedules should reflect the independent verification plus review time for project personnel, clients and regulators.

K-H oversight personnel were not involved until the latter stages of the project. When they became involved, it was such an intimate involvement that they probably could not be called independent of the final survey activity. They participated in fixing so many deficiencies that they became part of the final survey team. In fact, they became active

in sponsoring RFFO acceptance of the final survey.

A strong QA presence is needed to improve the quality of the final surveys and to provide confidence in the final survey report. This independent team could be different on-site RCTs using different instruments of the same type or other approaches to measurement. Periodic assessments of the final survey program should be performed, using experienced staff drawn from contractor, Federal, and State personnel, with a complement of off-site personnel. K-H QA program personnel should perform periodic internal assessments of the final radiation surveys and of their documentation. Third-tier contractors should also perform their own internal assessments of the final survey program.

K-H and RFFO oversight personnel should review all final survey data and document comments using an established QA monitoring approach. Written comments should be provided to project management for resolution and written responses provided back to the comment generator. Signature acceptance of the comment resolution should be obtained before the final report is issued. All survey data should be walked down to ensure complete coverage of the area. Statistical calculations should be independently verified on a random basis. Survey documents should be reviewed for consistency and validity. Experienced contractor and RFFO subject matter experts should be qualified for final surveys and assigned to D&D projects to prepare management for typical pitfalls, thus enhancing the RFFO's creditability as well as accomplishing the projects more effectively and reducing the cost of execution.

6. The Rocky Flats Environmental Technology Site needs to formally adopt the Multi-Agency Radiation Survey and Site Investigation Manual Procedures.

The final radiation survey approach taken on Building 123 was based on the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM); however, the actual work was conducted as a hybrid between MARSSIM and NuReg 5849. This happened because MARSSIM was proposed as a draft when the Building 123 program was developed. It was not in force and its technical approach was new. The final radiation survey plan laid out survey units according to MARSSIM principles, but the details were based on previous final radiation survey practice, principally NuReg 5849. The multi-agency approach developed by the Department of Energy, the Environmental Protection Agency (EPA), the Department of Defense, and the Nuclear Regulatory Commission has been made available for use as indicated in the Federal Register Notice dated February 11, 1998. It was subsequently distributed for use by the DOE Office of Environmental Policy and Assistance.

RFFO should incorporate the requirement to follow MARSSIM into the Integrating Management Contract. Project and oversight personnel should be trained and become proficient in MARSSIM, and also become competent in statistics as used so heavily in

MARSSIM to determine release of areas for unrestricted use. RCTs need to be trained on the use of MARSSIM and all final survey procedures that are part of the process. Criteria and methods should also be treated in the training. The legal liabilities that come with the final survey decisions should be stressed.

Specific survey procedures need to be developed that address characterization and final survey methods. A generic final survey program and a site survey framework need to be developed. Such a program would establish a process of final survey plans for each cluster (or whatever grouping of buildings and facilities is appropriate). The cluster plans would not repeat the program plan items, just customize them to the cluster.

A sample of the final survey report format should be submitted to the regulators for review and comment well before the actual preparation of the report. As survey data is completed, reviewed, and approved, regulators should be notified that the data is ready for review. Of course, all proposals, technical basis documents, and technical papers need to be technically thorough, well justified, and clearly written.

An extensive background study should be performed to determine what materials interfere with identifying DOE-added radioactivity. The background subtract values defined by such a study should be well documented in a technical basis document for use in all future D&D projects.

As more buildings undergo final survey, contractors should continue to look for ways to simplify the final survey process, thereby reducing the final survey cost. MARSSIM was intended to provide consistency in final surveys and reduce the number of smears and fixed point measurements. A sophisticated and highly engineered approach is required. There may be other methods to perform the survey using less sophisticated approaches which still achieve the same level of confidence in the data.

For planning D&D activities, two applications of the final survey process should be scheduled, one for characterization after strip out and the other for final survey leading to release. Because of the need to identify and re-survey all elevated measurements in the final survey report, it is not useful to survey and clean elevated areas during the stripout. Rather, the approach of identifying *all elevated areas and resolving them* before the final survey will probably be more efficient. Performing a characterization survey with the same protocol and the same instruments increases the likelihood of final survey measurements meeting release limits.

Characterization and final survey data should be reviewed as soon as possible and not allowed to stack up until the end of the project. This includes analysis and documentation with spread sheets, investigating elevated measurements, and making recommendations for further action.

Dedicated personnel trained in layout of grids and Computer Assisted Drafting should be assigned to grid survey areas and make survey maps. Such work is not appropriate use of RCTs. Dedicated personnel should be much less expensive and the product should be of higher quality. RCTs would be available for actual radiation measurements.

The expense to adequately survey the inside of pipes is not justifiable. If a piping system cannot be free released by process history, then it should be disposed as low level waste.

Minimum Detectable Activities (MDA) need to be specified and communicated to any laboratories used for analysis of material samples. MDAs should be lower than the release criteria specified in final survey plans for all isotopes.

7. The no-radiation-added policy as utilized for bulk samples should be revised to better reflect construction material background radiation levels.

The composition roof on Building 123 was a built-up roof which had been maintained by adding an additional layer at least twice in the building's 46-year life. Bulk samples of roofing material were taken and sent to an off-site lab for analysis. The estimates of radioactivity by isotope were compared to background radiation levels ***in soils.*** This approach does not accurately reflect the radiation that was added by DOE nuclear production activities. For construction materials used in buildings, the comparison should be to other similar materials, not soils.

8. Regulatory approvals were obtained in an expedited manner.

The Lead Regulatory Agency aided the flow of regulatory documents by performing its responsibilities in a consultative manner. Colorado Department of Public Health and Environment (CDPHE) personnel were involved in the dialogue that led to preparation of regulatory decision documents. EPA personnel participated fully in the process in support of the CDPHE. RFFO personnel expedited the review of documents internally and used simultaneous RFFO/CDPHE/EPA review to move the demolition project forward. Regulatory review did not impede project execution.

9. The number of documents required under the Rocky Flats Cleanup Agreement are significantly less than would have been required under the Interagency Agreement.

The simplified regulatory structure created by the Rocky Flats Cleanup Agreement (RFCA) called for a Reconnaissance Level Characterization Report, a draft and final Proposed Action Memorandum, a Sampling and Analysis Plan for Under Building

Contamination, and a Closeout Report. This number of reports is a major reduction from what would have been required under the Interagency Agreement. The old process would have called for draft and final versions of the Work Plan, Sampling Plan, Remedial Investigation/Feasibility Study, Proposed Plan, Record of Decision, Remedial Design, Remedial Action Plan, etc.

10. Full advantage has not been taken of the Rocky Flats Cleanup Agreement simplification. The contractor failed to include the closure of the portions of Resource Conservation and Recovery Act Unit 40—Old Process Waste Lines---associated with Building 123 in the Proposed Action Memorandum as it could have been.

Therefore, the CDPHE requested the subject closure plan in its comments on the draft Building 123 Proposed Action Memorandum (PAM) in June 1997. The process of drafting a closure plan, obtaining approval from the RFFO and the CDPHE, and putting it out for public comment took over six months. The closure plan is being revised in June 1998 to reflect the contractor's change in plans for timing the closure of contaminated piping under the slab. The revision will go out for public comment before being considered for approval.

11. The Lead Regulatory Agency, the Colorado Department of Public Health and Environment, has moved to expand the boundaries set in the Rocky Flats Cleanup Agreement.

The CDPHE conditionally approved the PAM, noting that the asbestos abatement plan and the Demolition Plan were to be provided prior to their implementation. (Alternatively, the CDPHE could have declined to approve the PAM until these two documents were prepared and included.) The asbestos abatement plan was submitted and the Demolition Plan was approved by one office in the CDPHE once the certifications of removal of asbestos and refrigerants was made. However, the Hazardous Materials and Waste Management Division announced that approval of the Demolition Plan was contingent on the final radiation survey information. They withheld their approval until completion of the review of radiation information. Approval was provided with one letter for the east wing and another for the north and west wing plus Building 113.

The RFCA does not identify the Demolition Plan as a decision document. In the previous demolition efforts (889, 690, 980) the contractor has submitted the Demolition Plan and approval has been granted without submission of radiation information. The Demolition Plan and its requirements derive from Air Pollution or Worker Health and Safety regulations having to do with release of asbestos-containing material or refrigerants into the atmosphere during demolition and safety of workers potentially exposed to asbestos during abatement.

The CDPHE Air Pollution Group has dealt with previous Demolition Plans, and approved the Building 123 Demolition Plan shortly after submission; however, the CDPHE Hazardous Materials and Waste Management Division withheld approval pending review of radiation survey data. Although not required by the RFCA, CDPHE approved the Demolition Plan after review of the building final radiation survey information. This latter approach is an extension of Lead Regulatory Authority established under the RFCA. Radiation requirements on a Federal facility derive from DOE requirements, not state statutes.

12. The documents prepared by the contractor required substantial revision before being adopted.

The best example of this occurrence is the Soil Sampling and Analysis Plan. It has undergone multiple rewrites since it was first provided in June 1997. It was thought to be final when furnished to the CDPHE in November 1997 after two previous revisions, but a single minor correction by the CDPHE somehow became a significant rewrite, which in turn induced a whole new set of comments from the CDPHE. After it was approved by the CDPHE in April 1998, yet another rewrite engendered. As of June 3, 1998, it is with the CDPHE for reapproval.

Other, perhaps more representative, examples are the Reconnaissance Characterization Report, the Project Execution Plan, and the Final Radiation Survey Plan which underwent several cycles of review and comment at the RFFO before being finalized.

13. The project initiation was delayed several months, making the Performance Measure unattainable.

The Proposed Action Memorandum was approved by the CDPHE on August 25, 1997, and the Project Execution Plan on August 29, 1997, by the RFFO. The request for approval of the K-H Environmental Readiness Review was not presented until November 25, 1997. The ERE approval to proceed was granted by the RFFO on December 3, 1997, with a number of pre-start findings, and for only a portion of the work program. (See item 14.)

This three-month initiation time doomed the performance measure, which called for demolition to be complete on February 10, 1998. Nevertheless, the contractor undertook a quick time approach to project execution (see item 1) and attempted to expedite work. The contractor appealed to the RFFO for relief on the Performance Measure completion date. After due consideration, that date was changed to March 10, 1998.

14. The Environmental Readiness Evaluation became very compartmentalized with many small steps.

The project management approach that the contractor should demonstrate readiness to start the project became diffuse. Rather than a crisp presentation of readiness, the ERE was subdivided into first two and then three parts. The expected start dates of the EREs were moved many times. The final part was started two months prior to need. (A large number of pre-start findings demonstrated the contractor was far from ready to start.) K-H said they were ready for the RFFO ERE when too many things still needed to be done to be ready to do the work. This approach resulted in the RFFO team personnel being unable to plan their work. It was very difficult to keep the same personnel and consistency in the ERE review. Previous knowledge could not be carried forward; thus the ERE was disjointed, taking longer than warranted.

Because of the changes and also because of the generation of needed documents well after the start of the ERE, it was difficult to pre-review documentation before the start of the ERE. Some documentation was reviewed a couple of months too soon and needed to be re-reviewed. Also, documents were changed and the revisions were not marked as requested, requiring time-consuming re-review.

Many documents were not ready when the ERE started or were not adequately prepared or reviewed. It was common for two or three required documents to be in draft or even not yet drafted. The project work was often not well thought out. For example, the Proposed Action Memorandum did not adequately consider the nature of rinsates from equipment dismantlement and decontamination activities. The PAM stated that rinsate from potentially radioactively-contaminated laboratory hoods would be directed to the sanitary sewer system. These hoods, although being rinsed to remove perchloric acid salts, were systems known to handle radioactive material. The sampling of the rinsate for radiological contamination was not mentioned in the memorandum. If radioactivity was found in the rinsate, it could not go to the sanitary sewer. As a result, the rinsate was pumped to the process waste system.

Work was initiated before the completion of the K-H and the RFFO ERE process. K-H was prompted to technically justify and notify the RFFO of the work package activities being performed before they had been given approval to begin work. Much of the work being performed was cosmetic in nature and was preparatory to the activities being evaluated by the Environmental Readiness Evaluation process.

RFFO personnel made a concerted effort to help the process and complete the work.

15. Integrated Work Control Program work packages were marginally prepared and maintained.

Activities designated with "shall" statements in contract specifications were not always

transferred into the body of the work package. Inclusion of the contract specifications as an appendix to the work package was expected to ensure that all contractual obligations would be met. As written, the work packages required field personnel to thumb through the entire package to ensure all requirements were being met.

Engineering Change Requests were not entered into the Integrated Work Control Program (IWCP) work packages in a timely manner. As a result, conditions exist where the work performed does not agree with the task identified in the approved work package. The protocol for controlling Construction Field Changes and Engineering Change Requests as changes or revisions to the IWCP work package was not clearly identified nor effectively monitored by Quality Assurance personnel.

Other Site organizations were assigned responsibilities, but never saw the packages before they were issued. The need for single-barrier lockout/tagout on some systems needed to maintain heat to other buildings did not appear to have been evaluated. The impact on other buildings of lockout/tagout was not reflected in any portion of the package. Communication, alarms, and power cabling within conduits attached to the building exterior were not identified during work package preparation.

RMRS and Denver West Remediation Company failed to ensure a temporary electrical service built by a subcontractor was properly inspected before being connected to the Site electrical distribution system. The temporary power system built for the asbestos abatement contractor had a direct phase short to ground that blew a fuse on the 13.8 kilo-volt system when energized. Fortunately, the 13.8 kilovolt to 480 volt transformer was not damaged.

16. Fixed price contract work should have a defined scope.

The performance time and the magnitude of strip out and decontamination work was ill-defined at the time of contract award. The work scope for a fixed price contract should be well defined so that the contractor knows what work is to be accomplished and what the schedule requirements are. The government receives competitive bids for the actual work to be performed.

17. Administrative turnover of the facility between organizations was not adequately conducted.

The turnover of Building 123 left the receiving building management contractor with substantial furniture, files, and equipment which should have been dispositioned by the previous building management. Significant effort was required to re-establish responsibility for such property. Freeze protection procedure was not part of the turnover even though the facility was entering into the freeze protection season as defined in Site documents. Tags of an administrative nature were left installed on building equipment. Technical information for operation of building systems was

removed from the mechanical room without the knowledge of the Stationary Operating Engineers.

18. Physical turnover of the facility between organizations was not adequately conducted.

The building systems needed to protect against freezing of water in piping systems had not been properly maintained. The condition of these systems were such that one component failure may have produced freeze-related damage. Systems needed to support equipment strip out work needed repair.

19. Communication with other Site organizations was ineffective or non-existent.

Training requirements for building entry were changed and immediately implemented. As a result, freeze protection monitoring and inspection of repairs to equipment needed for perchloric rinses were not performed in a timely manner. Work packages required support from other organizations, which was to be verified by signature in the work packages. None of the support organizations had cover sheet signatures for review, and, when interviewed, the support organization responsible supervisors had no knowledge of the extent of the activities expected of them. Support activities that needed to be scheduled on the support organizations' Plans of the Day were not requested by the project in a manner that supported its schedule.

20. Site-specific training appeared to be a significant obstacle to the organizations supporting the Building 123 demolition.

The discovery that radioactive contamination was more extensive than expected led to a need for trained radiation workers for strip out and asbestos removal. This was not anticipated, and caused the subcontractor to send employees for radiation worker training. A significant delay in providing trained workers resulted. Building strip out and asbestos abatement workers had difficulty completing radiation worker training in a timely manner.

21. Overall management responsibility was diffuse.

It was difficult to establish where authority resided. There did not appear to be one central manager in charge of the project. With the RFFO as an observer without authority and K-H as integrating contractor, the relationship between Denver West Remediation Company and RMRS, which were both under contract to K-H, may have become a little confused. The RCT that worked for K-H found RMRS had management responsibility for his work. Some of the radiation monitoring was performed by Science Ecology Group, another subcontractor to K-H. (Perhaps the organization was not

adequately understood by some.) It was not clear who the parties to the demolition contract were.

The number of meetings held at locations removed from the building may have contributed to project supervision not maintaining a constant watch on all work site activities. In one event where a forklift was used to compress bags of asbestos waste, supervision was not readily available to prevent the event from occurring.

A number of components formally identified for reuse were not removed before demolition. It is suspected that a moderate effort to mark these items was made, but it appears no effort was made to remove them. The failure to remove this equipment may be the result of poor communication between RMRS and DCI, or a perceived difficulty in obtaining permission and work packages to remove the equipment. RMRS eventually removed the marking from the equipment, and the equipment was removed as demolition debris.

22. The officially dedicated Rocky Flats Field Office oversight team did not function effectively.

In October 1997, a Building 123 team was established under the leadership of the D&D Project Coordinator for Non-nuclear Projects under the auspices of the Assistant Director for Environmental Compliance and managed by personnel from the group currently named the Environmental Restoration and Waste Management Closure Projects Team. The Building 123 team met twice monthly throughout the project. Many team members did not dedicate time to participation in this team. The overall team activities had the appearance to some of ad hoc activities. Members noted that the team lead did not have much authority. Contractor personnel sporadically participated in team meetings.