

ROCKY FLATS CLOSURE LEGACY STAKEHOLDER INVOLVEMENT



THE "STATE OF THE FLATS" (TOP) WAS HELD ANNUALLY AND INCLUDED PRESENTATIONS FROM DOE, K-H, CDPHE, EPA, AND DNFSB. PROTESTERS (ABOVE) LINE UP AT THE WEST GATE TO GREET THE FIRST SHIPMENT OF TRU WASTE FROM ROCKY FLATS TO WIPP.

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INTRODUCTION

Rocky Flats has had an active history of public involvement (see *Future Land Use, End State and Stewardship* section). It is not marked by a particular advocacy group, but rather by changes to its composition. The Community Reuse Organization was the Rocky Flats Local Impacts Initiative. Not unlike other sites, Rocky Flats had a Site specific advisory board, the Rocky Flats Citizen's Advisory Board (CAB). Also, a successor organization to the community reuse organization, the Rocky Flats Coalition of Local Governments (RFCLOG) was formed. Its membership included elected officials from the eight cities and counties surrounding Rocky Flats. The Rocky Mountain Peace and Justice Center, based in Boulder, Colorado, provided consistent, and typically adversarial, participation in Rocky Flats issues.

These formal and independent organizations were engaged in Rocky Flats cleanup and closure issues, and implemented processes for public involvement and interaction with Site officials. The Rocky Flats Field Office (RFFO), Kaiser-Hill (K-H), Colorado Department of Health and the Environment (CDPHE) and EPA supported these organizations and participated in their forums. These community, government and activist organizations were effective to varying degrees in influencing DOE decision-making. Other substantial public process and input was achieved through the formation of working groups focused on specific issues. These included the Environmental Restoration and D&D Working Group, the Radionuclide Soil Action Level Working Group, the Surface Water Information Meetings (SWIMS), and the Stewardship Working Group. These working groups were typically comprised of many of the same players that were members of the formal standing organizations, but these working groups provided a different dynamic, less formality, and a focus on specific issues that enabled a free-flowing dialogue. Much of the substantial progress made in public involvement was achieved through these working groups.

DISCUSSION

There was community distrust of Rocky Flats and the Department of Energy, rooted in the cold war mission, but relevant to the ability of DOE and its contractors to implement the cleanup in an aggressive and innovative manner. It was a constant challenge to separate the emotion of the cold war mission from the science of the cleanup mission, and this was essential to gaining community support, and then political support for the cleanup. The DOE was often engaged in arguments that were grounded in

ACCELERATED CLOSURE CONCEPT
CONGRESSIONAL SUPPORT
REGULATORY FRAMEWORK
CONTRACT APPROACH
PROJECTIZATION

SAFETY INTEGRATION
SPECIAL NUCLEAR MATERIAL
DECOMMISSIONING
WASTE DISPOSITION
ENVIRONMENTAL RESTORATION
SECURITY RECONFIGURATION
TECHNOLOGY DEPLOYMENT
END STATE AND STEWARDSHIP
FEDERAL WORKFORCE

STAKEHOLDER INVOLVEMENT

Providing greater stakeholder access to cleanup documents during the early stages of development creates significantly more work for the Federal and contractor staff, but ultimately leads to better decisions and achieves greater community ownership of the cleanup.

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events that occurred decades ago and had little to do with cleanup. But the distrust created then carried forward to the present.

The DOE reciprocated the distrust. It became evident that some activist groups were opposed to the cleanup. Under a thin veneer of concern for the environment was a core of anti-nuclear activism, with an agenda of ensuring Rocky Flats remained a negative image of the cold war legacy, versus a positive example of a Superfund cleanup. The misstatements and anti-nuclear rhetoric were transparent, but did find an audience with citizens genuinely interested in being informed about the cleanup. While this strategy on the part of the activists was tedious, it was essential that DOE address each issue raised to begin to correct the low trust of the DOE. This cycle of point and counterpoint with the activist groups created cynicism within the DOE, and skepticism that some stakeholders were not particularly interested in the cleanup, but were more interested in using it as a tool to further other agendas. Fortunately, this was not the majority sentiment as described further in this section.

Once the DOE filtered through the vocal minority, it discovered there were many concerned citizens amenable to open dialogue and with an agenda of ensuring Rocky Flats did not pose a long-term health risk to their communities. The challenge was to create a public dialogue that elicited greater participation from the public at large, particularly in the local communities, and de-emphasized the activist rhetoric.

Site Message

To gain broader community acceptance of the cleanup mission and the risk-based approach, DOE needed to proactively communicate its message about the cleanup. DOE and K-H staff engaged the media outlets, reporters, editors, Federal, State and local elected officials. A consistent Site message was developed and communicated corporately and was derived directly from the vision, the mission, the Rocky Flats Cleanup Agreement (RFCA), and the closure contract. The challenge was to distill these strategies and agreements into a concise and comprehensible message.

The evolution of the “bumper sticker” message reflects the evolution of the Rocky Flats cleanup mission. From “It’s the Plutonium Stupid” of the early- to mid-1990s, to “Make it Safe, Clean it up”, reflecting the full transition from production to cleanup, to “Rocky Flats Closure 2006” which reflected the vision of the DOE to achieve cleanup at a major DOE site by 2006.

There were several consistent themes that were reiterated by Site personnel during public meetings, tours and visits, and media interviews,

Develop and communicate a consistent site message.

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and were derived from Site planning documents. These messages included safety as a top priority, the comprehensive nature of the cleanup, compliance with regulatory standards, risk management, and the conservative nature of the cleanup. Some of these messages worked well while others did not.

Safety was the ubiquitous Site message. We would not be successful if we were not safe. The safety message was somewhat complicated and was frequently met with skepticism by some stakeholders who believed that the Site only raised safety issues when it wanted to reduce the scope of the cleanup. Long-term risks, forecasted by complicated models, were being compared to near-term exposure and acute risks to workers. These issues entered the dialogue when determining appropriate endpoints for decontamination activities prior to demolishing a building (e.g., How much additional exposure to workers is it worth for additional decontamination of a given facility?). These worker safety issues were most effectively communicated by the contractor supervisors and managers responsible for the workers and for the implementation of work. These “front line” managers and supervisors, directly involved in the decontamination and decommissioning work in the plutonium facilities, brought with them greater credibility than the managers and staff who routinely interacted with the stakeholder groups. What they may have lacked in presentation skills, was more than compensated by credibility and genuine, direct dialogue.

Another key message was that the cleanup would be comprehensive, conservative, and would meet or exceed all regulatory requirements. This proved to be an effective approach for reaching a broad audience beyond the core group of stakeholders engaged in monthly Site meetings. There was a general trust of the agencies overseeing the cleanup, and therefore, there was a general trust of the cleanup if it was going to meet or exceed regulatory standards. It was important to communicate this message repeatedly. Although it may not seem profound, since of course the cleanup complied with applicable law, this message did periodically get lost in the details of the cleanup. It was always worthwhile to revisit the regulatory sufficiency of the cleanup. Additionally, it was essential that the regulators not only agreed with this message, but were willing to state so publicly. And the regulators did agree that the cleanup was compliant, would satisfy RFCA, and in many cases was conservatively compliant. To their credit, the CDPHE and EPA were willing to repeatedly reaffirm that the cleanup was compliant.

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established institutions including the Colorado Congressional delegations, the regulatory agencies and the local elected officials.

One Site message that did not work well at all was regarding risk, and the context of the risk presented by residual contamination at Rocky Flats in terms of cancer and other environmental risks. Since the cleanup was conservative on many levels, including the development of the future Site use conceptual model, the calculation of cleanup levels, and the planning and implementation of the cleanup, the RFFO thought that discussions of risk would reinforce to stakeholders that the cleanup of Rocky Flats was robust. RFFO thought that by promoting this conservative approach, and by putting it into the context of the risks present in everyday life, and sources of exposure to radiation in every day life, that there would be greater acceptance of the risks that were modeled for residual contamination at Rocky Flats. This approach did not work well. Stakeholders that responded favorably to this discussion were generally already supportive of the cleanup. Risk comparisons (excess cancer risks associated with exposure to various sources of radiation) occasionally found their way into the print media in a favorable context. Overall, however, discussions about risk created more distrust than trust. Comparisons of exposure to residual contamination at Rocky Flats, to other sources such as medical treatment, living at altitude (in the Rocky Mountain west) or radon gas, were met with jeers and skepticism. It turned out that the science of the cleanup was not the most important component for the typical stakeholder. Many members of the public still believed that radiation dose received from DOE facilities was somehow worse than exposure from other man-made sources or from natural sources. No amount of fact would dissuade them. Even with respect to meeting regulatory standards, such as the State of Colorado stream standard for plutonium, most stakeholders were much more interested in knowing whether the DOE was in compliance with the standard than whether it was the right standard.

Openness

The RFFO made a conscious decision to move away from the “announce and defend” mode of doing business and to provide for early involvement in decision making. Tactically, the RFFO wanted to ensure cleanup decisions could be made, even where disagreement existed, and the decisions implemented. One approach to building trust was to increase access by the regulators and stakeholders to the Site, Site employees and Site documents. Since the Site was confident in its mission and its approach, it was also confident that greater public understanding of what was occurring inside the gates would increase trust and also improve the Site’s ability to make decisions and take cleanup actions.

Hold routine technical availability sessions with stakeholders and ensure knowledgeable contractor, regulator, and DOE staff are present to address stakeholder questions.

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DOE agreed to provide draft documents to stakeholders for informal comment. The intent was to provide early involvement in and ownership of decision-making processes, and to reduce the number of comments received during the formal comment period. This approach received mixed reviews by the DOE and contractor staff because this approach clearly increased stakeholder buy-in, but was a tremendous workload for both staff and management.

The RFFO also learned that community interests were not homogenous. The local governments and stakeholder groups were united in wanting Rocky Flats to be deactivated and decommissioned, and unlike other DOE communities, there was not a broad constituency for preserving jobs at Rocky Flats beyond the cleanup mission. But this is just about where the commonalties stopped. Cleanup levels, future Site access and use, and use of fences and signs were all hotly debated by the cities and counties, the Citizen's Advisory Board, and other local groups. Therefore, cleanup decisions often received broad acceptance, but almost always were made in the face of some dissent or minority opinion. The openness of the overall stakeholder interaction helped mitigate the impact of the minority opinions, since it was clear to all that the opinions had been heard. Thus the interactions were generally perceived to be fair, even if not totally satisfying.

The RFFO benefited from having both the EPA, CDPHE and virtually all active stakeholders in close proximity. Unlike, for example, the Hanford Advisory Board or the Idaho Citizen's Advisory Board, where the members are located across the state or even in different states, most CAB members and RFCLOG members lived within a 30-minute drive of the Site. This facilitated open and frequent communication. Both regulatory agencies were provided office space on Site and meetings occurred daily. Within the major plutonium facilities, the State regulators were invited to have maximum participation in the process and maximum access to cleanup documents. Stakeholder interactions were frequent and were both formal and informal.

One example of this openness involved the first major nuclear facility to be demolished at Rocky Flats, Building 779. Some stakeholders were concerned about the potential for adversely impacting air quality during the demolition, even though good facility survey data had been presented during public meetings. As a final step in the process, prior to facility demolition, a stakeholder tour was conducted inside the facility. And while such a tour certainly can not demonstrate the level of cleanliness of the facility, it did help to communicate in a non-verbal way that this was a decontaminated facility that was safe to enter in street clothes.

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Stakeholder Involvement in Formulation of Cleanup Levels

In 1996, the RFCA Parties announced the interim radionuclide soil action levels (RSALs) for plutonium, americium, and uranium. An action level under RFCA is a level of an environmental contaminant used to decide whether an accelerated action, such as soil removal, is needed. Action levels guided the selection and implementation of most cleanup actions at Rocky Flats. For plutonium, the action level proposed by the RFCA Parties was 651 picoCuries per gram (pCi/g). The action level was calculated based upon a 1 in 10,000 excess risk of cancer to an open space worker (note that this action level was developed prior to the designation of the Site as a future national wildlife refuge).

When the interim soil action levels were announced in 1996, many stakeholders were upset. Without understanding exactly why, they felt that the numbers were too high (not conservative enough). The proposed action level was met with widespread opposition throughout the stakeholder community, for two primary reasons. First, and notwithstanding the fact that the action level was regulatorily acceptable (CERCLA allows a residual risk of between 1 in 10,000 to 1 in 1,000,000 to the anticipated future user), the level was thought to be simply too high to be adequately protective. This criticism was voiced not only by long-time Rocky Flats activists (such as the Rocky Mountain Peace and Justice Center [RMPJC], who for some years had been asking for a cleanup to background levels of radionuclides), but also by local government leaders. The second reason for stakeholder opposition was the perception that the process used to determine the action levels was closed to meaningful public input, and that it was an example of the “decide and defend” strategy. In hindsight, the latter criticism had some merit, especially in light of the process that was to follow.

RFFO believed that some community members were clearly only interested in disrupting any process that led to a cleanup standard other than cleanup to background. It was important, however, to counter their arguments at every juncture, because there were other stakeholders ready to listen, and engage. Other stakeholders were genuinely interested in learning about the basis for the cleanup and weighing into the decision-making process. Unfortunately, in an open process, the DOE is not permitted to discriminate between those interested in the cleanup versus those interested in disrupting the cleanup.

The RFFO recognized the level and intensity of community concern, and also recognized that the issue needed resolution before embarking on major removals of contaminated soils, which were scheduled for late in

Earlier involvement and increased participation by stakeholders in cleanup decisions must be accompanied by their acknowledgement of the same regulatory and budgetary constraints placed upon the DOE.

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the project. In 1998 the DOE RFFO Manager and Assistant Secretary for Environmental Management agreed to fund a citizen-based group to re-examine the RSALs and propose a technically based alternative to the RFCA Parties. The group came to be known as the Radionuclide Soil Action Level Oversight Panel, or RSALOP, and met from the fall of 1998 through the spring of 2000. The RSALOP hired a private consultant, Risk Assessment Corporation (RAC), to develop a new set of RSALs. RAC's tasks included reviewing cleanup levels at other sites, reviewing available computer models for risk calculations, development of use scenarios and input parameters, and the calculation of the levels themselves. RAC's work ended in a series of reports, which included a recommended RSAL for plutonium of 35 pCi/g.¹⁸³ The basis for this number was a no greater than ten per cent chance of a child of a resident rancher receiving more than a 15 millirem dose in a given year. The scenario was exceptionally conservative, calling for the rancher and his family to live at the most contaminated part of the Site without interruption, drinking water and eating food grown only from the property.

The RAC work was subjected to a blind peer review. For this process RFFO agreed to have peer review candidates submitted for consideration by the various stakeholder groups. Then a third party consultant selected peer reviewers from the list. Only the third party contractor knew the identity of the peer reviewers for a given work product. This tended to dampen the rhetoric about peer reviewers and bias, since no one could know with certainty "whose" peer reviewer was responsible for a given set of comments. This blind peer review process proved to be a very effective tool for focusing the public discussion on the technical merits. The RSALOP ultimately recommended the adoption of 35 pCi/g as the new RSAL to the RFCA Parties.

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Both DOE and the regulators attended the RSALOP meetings, but were not members of the Panel. Although provided with copies of draft reports, neither DOE nor the regulators provided substantive technical comments, preferring to allow the evaluation to proceed in a completely independent manner. Importantly (given the conversations that were to ensue with the community), DOE made no attempt to constrain the results of the RSALOP work by introducing either budgetary or regulatory concerns. DOE funding for the RSALOP's efforts totaled about \$500,000.

Cleanup Levels and the Stakeholder Focus Group

In 2001, on the heels of the RSALOP's recommendations, DOE convened the RFCA Focus Group to get community feedback on basic approaches to environmental restoration at Rocky Flats, including, if possible, a consensus on cleanup priorities. The RFCA Focus Group's purpose was to

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facilitate community discussion and debate, and to make the process of setting final cleanup levels more transparent. The focus group developed a syllabus for weekly meetings and focused on issues of national cleanup standards, modeling, future land use exposure scenarios, and dose versus risk. Agendas were developed collaboratively with the regulators and stakeholders.

The RFCA Focus Group had a broad range of participants, including representatives from the established community organizations (CAB and RFCLOG), as well as some of Rocky Flats' most vocal critics from the RMPJC, the University of Colorado faculty, and the community at large. The RFCA Parties and Kaiser-Hill began the Focus Group by providing detailed briefings on environmental conditions at Rocky Flats. Later on in the discussions, DOE and the regulators (especially EPA) confronted the members of the Focus Group with the twin constraints that had not been raised during the RSALOP's deliberations: that cleanup decisions would ultimately be limited by the available budget, and that the RFCA Parties would not be compelled to embark on a cleanup that was beyond the CERCLA risk range for the anticipated future user (by then, the wildlife refuge worker). The reaction from certain members of the Focus Group was strong, negative, and immediate. This was in particular true of those group members who believed strongly that a) the risk from residual plutonium was far greater than the RFCA Parties were representing, b) that it was morally irresponsible to consider making economic risk trade-offs, and/or c) that DOE had a moral imperative to return the Site to its pre-manufacturing condition.¹⁸⁴

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This viewpoint was not universally shared among Focus Group members. Certain members, especially elected representatives of local governments, recognized and were comfortable with the notion of having to make decisions in the public interest under fiscal constraints. Other members (including members of CAB), more accepting of the RFCA Parties' representations of the risks posed by plutonium, openly questioned the need for large expenditures for minimal incremental risk reduction.

Focus Group discussions continued for over a year. In addition to the Focus Group meetings, the RFFO responded to stakeholders that requested additional technical availability sessions. The Site would provide federal and contractor personnel for technical briefings and question and answer sessions prior to the Focus Group meetings. As part of the Focus Group process, the RFCA parties and K-H developed technical papers that served as the building blocks for development of the soil action levels. While no firm consensus was reached on the application of cleanup levels, certain priorities began to emerge. These were an emphasis on the protection of surface water that could leave the Site and, by extension, a desire for as

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much cleanup of surface soils as regulation and money would allow. Focus Group members in general pushed for as much cleanup as possible. Those that were willing to engage in the trade-off discussion helped to formulate the approach that was later codified in the modifications to [RFCA Attachment 5](#),¹⁰⁵ which posited a much reduced RSAL for surface soil (50 pCi/g), while allowing considerably more residual contamination at depth.

During 2001 and 2002, the RFCA Parties undertook the re-calculation of the RSALs, forming an interagency working group to facilitate the process. Meetings of the RSAL working group were open to the public, affording the chance for interested stakeholders to monitor these highly technical discussions and express their views. This work culminated with the release of the proposed RSALs late in 2002, as part of revisions to the RFCA soil actions level attachment. While a level of approximately 100 pCi/g of plutonium in surface soil was calculated to represent an excess cancer risk of 1 in 100,000 to a wildlife refuge worker, the proposed RSAL was set at 50 pCi/g to further ensure broad community support. The proposed revisions received a 60-day formal review, were adopted in June 2003, and were the basis for the major soil removal actions at Rocky Flats, including the 903 Pad and Lip area.

The extensive public process surrounding the determination of cleanup levels at Rocky Flats had a number of profound effects. The RSALOP process resulted in a recommended cleanup number that garnered wide public support, echoed in a final RSAL thirteen times lower than the one originally proposed. A number of the technical approaches employed by RAC were adopted by the interagency RSAL working group. Finally, the discussions with the RFCA Focus Group, while often contentious, led to a change in cleanup approach whereby much more surface soil was removed than originally anticipated. Overall, the DOE believes that these efforts resulted in a successful outcome in terms of project completion, regulatory compliance and stakeholder satisfaction. Recently, the U.S. General Accountability Office surveyed local stakeholders on the success of the cleanup, and twenty-two of twenty-four respondents said they were somewhat to extremely confident that the cleanup will be protective of human health and the environment.¹⁸⁵ The relatively few stakeholders still expressing strong objections continue to voice the concerns raised during the RFCA Focus Group, along with an additional concern that the presence of plutonium in the environment will outlast land use controls at the Site.¹⁸⁶

The process of setting action levels for soil cleanup proceeded iteratively, as described above, for seven years, from 1996 to 2003. The soil-action level issue was always contentious and for many stakeholders was the

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issue that would demonstrate whether the DOE was really serious about cleanup, or was merely trying to get by with the minimum. A major component of settling the RSALs issue was DOE's insistence and eventual agreement by the stakeholders that the RSAL debate must be conducted within the framework of a risk-based cleanup. Ultimately, what this meant at Rocky Flats was that a lower (more conservative) RSAL could be established for surface soils, where exposure presented a greater relative risk, and a higher cleanup standard would be established for subsurface soils where the risks were lower. The Focus Group process did eventually deliver cleanup numbers that received broad community acceptance. The cleanup numbers became the final numbers, and were the basis for remediation of radionuclides in soil. The process and the levels were generally viewed favorably by Rocky Flats stakeholders, the media and the politicians overseeing the cleanup.

It should be noted that the RFCA Focus Group was extraordinarily expensive in terms of staff preparation time and would likely receive mixed reviews from agency people involved in the process. It is difficult to gage the impact of not having pursued this process. The level of stakeholder controversy and interest was such that extraordinary effort was necessary for resolution. But in terms of achieving its stated goals for the RFFO and for the regulators, it was successful. Cleanup levels were determined that were based in science (albeit, still very conservative), received broad community acceptance, and dispelled the notion that these numbers needed to be revisited yet again.

Deer Trail Disposal Facility

A contrasting example where the stakeholder dialogue was not successful involved the disposal of low-level radioactive waste. Rocky Flats is the only major DOE closure site to date that does not have onsite disposal of low-level radioactive waste. This decision was agreed to by the RFFO Manager and the Assistant Secretary for EM at a controversial public meeting in September 1997 to discuss some of the most critical assumptions that would enable a targeted site closure by 2006. The stakeholders understood the short-term transportation risks versus the long-term real and perceived risks of waste remaining in the area, and advocated removal of all wastes. After a quick cost comparison demonstrated the cost tradeoff was comparable, the commitment to the community was made and reflected in future planning documents. This commitment to remove all waste is one of the most important when it came to community acceptance of the cleanup; most stakeholders recognized this for the good deal that it was.

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At the time the commitment was made, options for disposal of low-level waste were limited to the Nevada Test Site or the commercial facility Envirocare of Utah. K-H took the lead on pursuing a business relationship with a land fill operator in eastern Colorado for the purpose of achieving a radiation license and accepting low-level waste from Rocky Flats. This could have meant substantial savings in transportation costs since the proposed facility was only 90 miles from Rocky Flats, as opposed to shipping low-level waste to Nevada and Utah. It also would add competition for disposal costs with an expected lower cost for disposal. The initiative was picked up as an election issue for the Colorado Governor's race in 1998 and science went out the window. It was portrayed in the media as one of environmental justice, a metropolitan suburb of Denver "dumping" its problem on the poor eastern farming and ranching communities. Ironically, the community of Last Chance, Colorado where the facility was located was supportive of the initiative because of the employment potential. The initiative was ultimately unsuccessful because the issue became partisan and politicized. One of the lessons learned here was to be mindful of the election cycle when pursuing controversial matters.

Community Dialogue on Long-Term Stewardship

The dialogue with local stakeholders regarding the long-term, post-closure maintenance of Rocky Flats, also known as long-term stewardship, began in the late 1990's, as it began to be apparent that the Site would be closed in the foreseeable future. It also began to be apparent that, almost regardless of the level of cleanup, some long-term monitoring and maintenance would be needed at the Site. In June 1999, the Rocky Flats Stewardship Working Group (SWG) was established as a joint venture between the CAB and the RFCLOG. The SWG was formed to examine a number of issues, including the types of environmental activities that would be needed, retention of Site-related information, assurance of funding for long-term stewardship activities, and regulatory oversight and enforcement. The DOE participated in the SWG as an ex-officio member, as did CDPHE and the Colorado Attorney General's Office.

During the period of active remediation at Rocky Flats, three primary issues dominated the stewardship conversation: factoring in long-term stewardship concerns into the selection of remedial activities, ensuring the regulatory enforceability of long-term stewardship activities, and funding assurances for long-term stewardship. To address the first concern, the [Environmental Restoration RFCA Standard Operating Protocol \(ER-RSOP\)²⁴](#), the umbrella decision document under which most environmental restoration accelerated actions were conducted) was revised to include long-term stewardship criteria in the remedy evaluation process.

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Additionally, larger, individual decision documents (such as those that were written for the landfill closures) also contained sections on long-term stewardship requirements. When the actions were completed under the ER-RSOP or individual decision documents, closeout reports documented long-term stewardship needs.

The second concern, the enforceability of long-term stewardship requirements, is being addressed by making stakeholders aware of, and allowing informal comment on, early draft versions of the post-closure Rocky Flats regulatory agreement, which is in negotiation at this writing. This was a primary topic at the later SWG meetings in 2004 and 2005, which allowed stakeholders to get an understanding from the regulators and DOE regarding the legal underpinnings of an agreement, and the enforcement powers that the State and EPA had. DOE, the State and EPA will finalize the post-closure agreement for Rocky Flats in 2006, and have committed to allow stakeholders to review and comment on it before it is signed.

The final issue, that of assuring funding for long-term stewardship activities, has been the most problematic, given the extended time that monitoring and maintenance will be required at Rocky Flats, and the inherent uncertainty in the federal budget cycle. In the late 1990's and early 2000's, many stakeholders insisted that a trust fund be established for long-term stewardship, although DOE advised that such a fund could not be established given the agency's annual dependence on Congress for funding. Although never entirely resolved, the establishment of the DOE Office of Legacy Management in December 2003 seemed to give stakeholders more confidence that DOE was serious about funding its long-term obligations at closure sites like Rocky Flats. This confidence was reinforced by a successful transition of physical Site operations from the DOE Office of Environmental Management to DOE Legacy Management in late 2005.

During the long-term stewardship dialogue, both the stakeholders and DOE authored documents on long-term stewardship issues. The SWG produced [*Hand in Hand: Stewardship and Cleanup*](#) in March 2001.¹⁸⁷ This report reviewed previous cleanups and stewardship issues at Rocky Flats, and reviewed the long-term stewardship techniques that could be used at the Site. In June 2003, DOE produced the [*draft Rocky Flats Long-Term Stewardship Strategy*](#),¹⁸⁸ which outlined policies on a number of individual topics, including monitoring and maintenance, information management, regulation of activities, and funding. Although overcome by events and therefore never finalized, the *Strategy* provided a documented reflection of the issues discussed with stakeholders, and the policies developed therein have formed the basis for post-closure activities at

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Independent Verification of Cleanup Activities

In 2004, with the end of the Rocky Flats closure project in sight, many stakeholders, including members of RFCLOG and CAB, became concerned that there was insufficient independent verification that the cleanup had met its goals. Stakeholders asked that DOE fund additional reviews of the cleanup, to be performed by independent experts. This request was forceful, notwithstanding the fact that the closure had been continually subject to regulator approval and community review. Many stakeholders did not consider themselves to be technically proficient to perform such a review, and did not consider the State and EPA to be truly independent overseers of the project. The regulatory cooperation that allowed the cleanup to proceed so successfully, for some stakeholders, was cause to question whether the regulators had lost their objectivity. Also, the 2003 final soil action level decision was still on the mind of many stakeholders.

To address the concerns, DOE agreed to hire outside contractors to review the levels of residual radionuclides, especially plutonium, in surface soils following cleanup. The rationale for performing such a review was that surface soils would not be monitored routinely after the cleanup (unlike surface water and groundwater), and a recognition that it was very important to have certainty regarding levels of residual surface soil contamination, given future Site use as a wildlife refuge. Some stakeholders, particularly the neighboring cities of Westminster and Broomfield, were concerned about other more narrow topics, including water management and landfill closures, and retained experts to advise them on those topics as well.

DOE embarked on a three-part approach to characterizing residual contamination in surface soils, which was briefed to stakeholders in early 2005. First, DOE contracted with Bechtel-Nevada to perform an aerial gamma survey of the entire Site using a helicopter. The purpose of this survey was to ensure that there were no undiscovered areas of contamination at the Site, a concern that had been raised on a number of occasions by environmental activists. Second, DOE asked Kaiser-Hill to perform ground-based radiological surveys (in addition to those that were required by the regulators) around the perimeters of soil remediation areas, to ensure that the extent of contaminated soils and their removal had been completely defined. Finally, DOE retained the Oak Ridge Institute for

The regulatory cooperation that allowed the cleanup to proceed so successfully caused some to question whether the regulators had lost their objectivity. To address the concerns, DOE agreed to hire outside contractors to review the levels of residual radionuclides in surface soils following cleanup.

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Science and Education (ORISE) to investigate an area that had already been cleaned up (the so-called 903 Lip Area), to ensure that the residual contamination there was consistent with RFCA requirements.

The first two portions of the DOE verification effort generally went well. Bechtel-Nevada performed the [helicopter survey](#) from June 12 to 15, 2005¹⁸⁹. No radiological anomalies were found, apart from known sources that still existed at the time. The survey initially identified one location with higher readings on the southwest border of the Site, but subsequent more sensitive, ground-based measurements determined that the area was within acceptable parameters. The survey was somewhat hampered by the fact that soil moisture conditions at the time of the overflight did not allow for the level of resolution that had been hoped for, however the survey was still able to satisfy the verification objectives. The inability to reach the desired optimum made it difficult to communicate the relationship between the actual level of detection and DOE's regulatory requirements. In hindsight it would have been better not to identify an optimal target, as some viewed failure to reach the optimum as failure of the entire effort. None-the-less, the aerial survey achieved its goal and DOE judged the effort a success, a sentiment mirrored by many stakeholders.

In hindsight it would have been better not to identify an optimal survey-resolution target, as some viewed failure to reach the optimum as failure of the entire effort.

Kaiser-Hill's scanning of the perimeters of remediated areas, using a more intensive scanning regime than was required by the regulatory decision documents, did find small areas where contamination exceeded the RFCA soil action levels, and these were removed without incident. The survey met the goal of demonstrating that the boundary of the cleanup actions was sufficiently large to have removed the contamination.

In contrast to these first two, the ORISE effort to verify residual contamination levels in remediated areas was not easily defined in terms of success or failure to the stakeholders. The Rocky Flats survey and sampling protocols had been designed using CERCLA-based techniques which focus on risk while ORISE used sampling and survey protocols known as MARSSIM which focus on dose. The CERCLA-based protocols were based on EPA guidance and had been refined by Rocky Flats and its regulators over a number of years, while MARSSIM was developed by DOE, EPA and the Nuclear Regulatory Commission. MARSSIM had been used successfully by ORISE for several years to verify the levels of residual contamination within buildings at Rocky Flats prior to demolition, and the RFFO believed those protocols could be easily adapted to sampling of soil outside the buildings, and also provide an independent double-check. However, there were fundamental differences between MARSSIM and the CERCLA-based approaches, and both approaches require considerable use of professional judgment. These differences created some legitimate technical problems, however these

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could be worked out between the technical experts. A greater problem was the significant confusion created for the stakeholders.

The confusion was partly addressed by focusing the use of MARSSIM on two small areas of the 903 Lip Area. The ORISE sampling effort showed that the areas had been cleaned up to meet the 90% probability specified in the RFCA decision documents, and in fact to an even higher 95% confidence level. ORISE also performed a full radiological surface scan of the same areas which identified some locations for “biased” sampling. Laboratory analysis of the biased samples revealed small areas of elevated plutonium in excess of the RFCA action level of 50 pCi/g of plutonium.¹⁹⁰, casually referred to as “hot spots”. (Elevated plutonium in some locations is expected due to natural variability and averaging, while “hot spot” has a precise definition related to concentration and size.) The elevated plutonium alarmed many stakeholders who did not understand how one technique used by ORISE could show the cleanup was better than regulatory minimums, while another technique in the exact same area was apparently higher than the cleanup standard. The answer was in the differences between elevated plutonium and “hot spot”, differences between risk-based and dose-based analysis, and the differences between action levels and cleanup standards. RFFO and the regulators were not able to sufficiently explain the differences in a way the stakeholders could understand, in fact leading to even greater confusion and suspicion. RFFO decided to remove the small elevated plutonium areas, although not strictly required to meet the CERCLA cleanup requirements. [The regulators agreed](#) that no additional MARSSIM-type contaminant surveys would be required in order to meet the cleanup provisions of CERCLA and RFCA.¹⁹¹

While this episode did cause tension between DOE and its stakeholders, the overall result of the ORISE work was to increase confidence in the cleanup, according to a survey taken by the GAO.¹⁸⁵ The RFFO also learned that its efforts at communicating with stakeholders regarding risk-based decision-making still had a long way to go. The entire seven years of dialogue and thousands of contact hours to establish the risk-based soil action levels was not enough for many stakeholders. When the ORISE information came to light they saw the issue as “clean or not clean”, and the risk basis underpinning the entire RFCA structure was discounted.

The Future of Stakeholder Involvement at Rocky Flats

As of March 2006, the RFCLOG was disbanded, and by July 2006 the CAB ceased its operations as well. The Rocky Flats Stewardship Council is now the primary stakeholder organization for Rocky Flats. The Council, funded by DOE Legacy Management, began its operations in

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March 2006, and is composed of the seven RFCLOG member governments, one rotating government member, and four openings for citizen representatives. The Council will meet quarterly (as opposed to the monthly CAB and RFCLOG meeting schedules) and will take up issues relating to long-term management of Rocky Flats, including issues related to Rocky Flats former employees.

KEY SUCCESS FACTORS

1. Develop clear and simple site messages regarding your mission and focus. These will serve as a consistent backdrop for stakeholder discussions and also help with internal consistency as other factors impact a project or site over time.
2. Consult stakeholders early in the decision process and, to the extent practicable, empower them to affect the decision that is ultimately made. At Rocky Flats, the best example of this “openness” was the funding of a citizens’ panel by DOE to determine a plutonium soil cleanup level that would be generally acceptable to the community. Even for less momentous decisions, DOE routinely provided pre-public comment period drafts of decision documents to key stakeholders, allowing them to become familiar with proposals early and provide critical feedback.
3. Advise stakeholders of legitimate DOE constraints early in the decision-making process. One criticism of the soil action level-setting process, especially by the environmental activist groups, was that DOE was not open about its constraints that the cleanup must be accomplished within budget and regulatory requirements. While seemingly self-evident, more explicit discussion of this earlier in the process would have forestalled this criticism.
4. Similarly, become familiar with the core interests of key stakeholders. As an example, communities to the east of Rocky Flats are fundamentally concerned with the quality of water leaving the Site, which colors their reactions to all Site-related decisions. Knowing these core interests may allow DOE to fashion proposals in a more palatable manner for key stakeholders.
5. Provide opportunities for stakeholder interactions outside of formally established stakeholder groups. This includes scheduling public information and working group meetings, availability sessions, as well as one-on-one meetings with key stakeholder groups. These types of forums allow stakeholders greater access to

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DOE personnel, the ability to delve into individual issues with great depth, and encourage informal interchange that builds personal relationships with key stakeholders.

6. Cultivate relationships with Congress and the press. Almost inevitably, unhappy stakeholders will seek assistance from members of Congress and the media for help with issues of concern. DOE staff and management should establish positive relationships with Congressional staffers, members of Congress themselves (in the case of management), and local media representatives. Numerous issues at Rocky Flats (such as independent verification) played out with members of Congress and the media, and having established relationships with these people was very helpful in reducing pressure on DOE in the decision-making process.
7. Provide the stakeholders access to cleanup documents during the early stages of development. It creates significantly more work for the federal and contractor staff, but in the long run it achieves more stakeholder ownership of the cleanup.
8. Schedule and conduct routine informational meetings to apprise interested stakeholders of project progress. This serves to build trust, can be done in a less formal environment (without charters and facilitators) and is an opportunity for the DOE to communicate its message.
9. Consider the cycle of elections when addressing controversial public issues, and the potential for a legitimate technical and policy decision to be derailed by election politics.
10. Be very clear on purpose and goals when pursuing additional actions beyond regulatory requirements. Our independent verification initiative to increase public confidence had the opposite effect with some stakeholders, despite the actual data and results.
11. Establish very clear scope, performance criteria, quality assurance and reporting protocols for independent verification efforts. An “arms length” approach to preserve technical independence can still be achieved while ensuring the business management is controlled per appropriate contracting requirements.
12. You cannot over-communicate with an interested and engaged stakeholder group. Especially with new and unfamiliar technology

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and protocols, it is necessary to be very thorough in explaining the technology and achieve good understanding before the results are presented.

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REFERENCES

Citation	Ref. No.
Environmental Restoration RFCA Standard Operating Protocol (ER RSOP) for Routine Soil Remediation, Modification 1, September 2003.	24
Final RFCA Attachment 5, Rocky Flats Environmental Technology Site Action Levels and Standards Framework for Surface Water, Ground Water, and Soils, May 2003.	105
FINAL REPORT Technical Project Summary Radionuclide Soil Action Level Oversight Panel, February 2000.	183
Risk Communication, Fugitive Values, and the Problem of Tradeoffs at Rocky Flats, A REPORT prepared by Theresa Satterfield and Josh Levin, Decision Research for the U. S. Department of Energy Low Dose Radiation Research Program, December 2002	184
Nuclear Cleanup of Rocky Flats DOE Can Use Lessons Learned to Improve Oversight of Other Sites' Cleanup Activities (GAO-060352), June 2006.	185
Moore, LeRoy, <i>ROCKY FLATS The bait-and-switch cleanup</i>, Bulletin of the Atomic Scientists, January/February 2005.	186
Hand-in-Hand: Stewardship and Cleanup Report from the Rocky Flats Stewardship Working Group to The Rocky Flats Coalition of Local Governments and The Rocky Flats Citizens Advisory Board, March 2001.	187
Rocky Flats Long-Term Stewardship Strategy, Final Draft, June 2003.	188
AN AERIAL RADIOLOGICAL SURVEY OF THE AREA SURROUNDING AND ENCOMPASSING THE ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE (DOE/NV/11718--1153), December 2005.	189
INDEPENDENT VERIFICATION OF SOILS AT THE 903 PAD INNER AND OUTER LIP AREAS ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE, GOLDEN, COLORADO	190
Max H. Dodson, Gary Baughman, and Frazer Lockhart ltr. to Distribution, Re: Removal of the 13 Areas of Elevated Surface Soil at the 903 Lip Area, September 27, 2005.	191
Rocky Flats Environmental Technology Site Proposed Plan, July 2006.	209