ROCKY FLATS CLEANUP COMMISSION
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THANKS.

COMMENTS ON INTERIM REMEDIAL ACTION OPERABLE UNIT 2 (OU2)

INTRODUCTION:

Throughout its 39 years of operation, the Rocky Flats Plant (RFP) located sixteen miles northwest of Denver, Colorado, has served as a pivotal link in our nation's nuclear weapons complex. The primary operation of the RFP has been the fabrication of plutonium triggers used as detonating devices in nuclear bombs. Besides triggers, the plant has produced a wide variety of contaminants that threaten public health through the contamination of the soil, water, and air both within the plant's boundaries and beyond.

To facilitate cleanup of the environmental hazards a Federal Facility Agreement and Consent Order between the U.S. Department of Energy, the U.S. Environmental Protection Agency, and the Colorado Department of Health has been developed. This agreement, known as the Interagency Agreement (IAG) divides the contaminated areas, both on and off-site, into sixteen operable units (OU's) ranked according to their cleanup priority.

The purpose of this paper is to provide an overview of the Interim Remedial Action at the second Operable Unit (OU2). A description of the site, the extent of its contamination and threat to the public's health, as well as the Rocky Flats Cleanup Commission's analysis of the cleanup strategy will follow.

WHAT IS OPERABLE UNIT TWO?

OU2 is a collection of twenty individual hazardous substance sites (IHSS) located in the east-southeast corner of the RFP, approximately one and one-half miles west of Indiana Street. The site is composed of the 903 Pad, Mound, and East Trenches Areas.

The 903 Pad Area was used during the 50's and 60's as a storage area for drums containing plutonium and uranium contaminated oils and solvents. Over time the drums corroded allowing their contents to leak into the soil. It is estimated that 5,000 gallons of liquid containing 86 grams of plutonium leaked into the soil. In the late 60's, an attempt to clean up the area was made by scraping the plutonium contaminated soil into a small area, covering it with fill material, and then capping the site with an asphalt layer. During this activity wind-blown dust spread the contamination to adjacent areas.

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By [illegible] UNM
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ADMIN RECORD

A-OU02-000168

The Mound Area consists of a former drum storage site for which cleanup was made in 1970. In addition, there is a burial trench that still contains depleted uranium chips and plutonium ships coated with lathe coolant.

The East Trenches Area is a collection of nine burial trenches where depleted uranium, flattened depleted uranium and plutonium contaminated drums, and sanitary sewage sludge were buried. These trenches have not been disturbed. An area adjacent to the trenches was used for spray irrigation of contaminated sewage treatment plant effluent.

WHAT IS THE NATURE AND EXTENT OF THE CONTAMINATION?

During investigation of OU 2, serious contamination of the soil, surface and ground water has been detected. The source of the contamination is from radionuclides (primarily uranium and plutonium) and organic chemicals that have leached from the soil into the surface and ground water systems. Most of the surface water contamination is from seeps, or areas where the ground water surfaces.

Water from the seeps flows into either Walnut or Woman Creeks and then into a series of detention ponds. The water in the ponds is treated according to the RFP's National Pollutant Discharge Elimination System Permit before it is released to continue off-site. These NPDES standards do not contain provisions for radionuclides.

Final cleanup of the area will involve either removing or somehow stabilizing the contaminated soils which are the primary source of contamination. Further, treatment of the ground water must be accomplished to prevent the spread of contaminants throughout the underlying aquifer.

Because the contaminated water surfaces at the seeps, an imminent public health threat exists when the seeps continue to discharge into the creeks, the detention ponds and ultimately beyond the plant's boundaries towards public drinking water supplies. Due to this threat and given the length of time necessary to fully remediate the site, an Interim Remedial Action has been proposed to treat the surface water seeps.

WHAT IS PROPOSED IN THE INTERIM MEASURE?

The interim measure involves collection of the surface water at the seeps using sump pumps. The water will be drawn into tanker trucks and transported to a treatment center.

In the treatment center two purification steps will take place. The first step utilizes chemical precipitation and cross-flow membrane filtration to remove radionuclides, suspended solids, and heavy metals. The second step uses granular activated carbon columns to remove the volatile organic compounds. After treatment, the water will be discharged to flow into detention ponds above South Walnut Creek.

Nothing is proposed in the Interim Measure to deal with the source of the contamination, namely the soil. Also, no attempt to divert ground or surface water from the site is planned.

HOW EFFECTIVE WILL THIS INTERIM MEASURE BE?

Although the Rocky Flats Cleanup Commission supports the public health protection principle behind the interim remediation proposal, several points in the plan come under criticism. Critique centers around the lack of appropriate standards to gauge the effectiveness of the proposal, potential flaws in the design, as well as concerns that the proposal does not address the source of the contamination.

The first point of concern is that the Interim Measure is based on a premise that Applicable or Relevant and Appropriate Requirements (ARARs) standards may be waived. These standards set maximum levels for which contaminants may be present in the treated waters. It is astonishing that after completing the treatment process the ARAR target goals will not be accomplished. The proposal allows for NPDES to serve as protection guidelines, but as mentioned above, NPDES do not provide standards for radionuclides.

Another concern is that adequate studies have not been completed to better understand the exact chemical nature of the contaminants. Further, more study is necessary to produce a clearer picture of the relationship between the ground and surface water systems.

Other items of concern are as follows. First, the design flow for the system is flawed in that it does not adequately address maximum flow events such as a 100 year flood that may overwhelm the pumping system and allow contaminants to flow downstream. Second, the use of manually operated sump pumps is excessively labor and equipment intensive. A danger exists in allowing tanker trucks to travel between the seeps and the treatment center by use of Indiana Street. If transport trucks are utilized they should be thoroughly inspected and washed of any contaminants that might be present before they leave the plant site.

Consideration must be made regarding the treatment facility itself. First, bench scale tests using actual site waters should be conducted to guarantee the efficacy of the system. Second, real-time testing to gauge operational standards and also to provide worker safety must be implemented. Standards and guidelines regarding the handling of the residues generated by the filtration process and also the depleted carbon columns should be developed to address worker health and safety. Finally, the "clean" water should be used internally rather than discharging it to South Walnut Creek where it can become recontaminated.

Overall, this interim measure can be viewed as an inadequate attempt to address a real public health threat. The major flaw resides in the fact that the source of the contamination will not be addressed, namely the contaminated soils. Because the interim measure does not address attempts to treat or deal with the soil, this source of contamination will remain until final remediation is completed several years from now.

WHAT ARE SOME ALTERNATIVES?

In general, if surface water contamination presents the public health threat, then a system to prevent contact between surface run-off water, ground water, and the contaminated soils should be devised. First, an engineered surface capping program to eliminate the infiltration of precipitation into and through the areas of concern should be installed. This capping can include inexpensive synthetic liners, a thin soil cap, or any of the commercial dust suppressants or sealants. By cutting off the infiltrating precipitation, the amount of contaminated surface and ground water will be reduced.

A second approach is to divert surface run-off waters away from the site. A well-designed surface water diversion system will not allow run-on into the area.

Finally, to prevent ground water infiltration into the seep areas, passive barriers to ground water movement such as slurry walls, sheet pilings, or drains upgradient of the areas can be installed. After the cut-off structures are in place, test wells in the source area can determine their effectiveness. If it is found that ground water is welling up from the underlying bedrock, then dewatering wells can be installed before the ground water is contaminated in the source area.

IN CONCLUSION

The Interim Remedial Action for OU 2 as outlined above is an attempt to relieve an imminent threat to the public's health caused by radionuclide and organic contamination of surface waters that have the potential to enter public drinking water supplies. As proposed by EG&G and the Department of Energy, an attempt will be made to treat the symptoms of the contamination by collecting and treating the surface waters. This approach is plagued by a variety of technical and design flaws that call into question the overall effectiveness and benefits to be gained.

As we have suggested, the Rocky Flats Cleanup Commission would prefer an Interim Measure that deals with the source of the contamination rather than an attempt to treat the symptoms. By stabilizing the contaminated soils and by preventing the surface and ground water from coming into contact with the soils, the goal of protecting the public's health may be better accomplished.

ROCKY FLATS CLEANUP COMMISSION

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What is the Rocky Flats Cleanup Commission?

In 1989, the Rocky Flats Cleanup Commission (RFCC) received a Technical Assistance Grant (TAG) from the Environmental Protection Agency (EPA). Congress mandated the TAG program through the Superfund Ammendments and Reauthorization Act (SARA) of 1986. The TAG amendment was intended to allow local citizens affected by National Priority List (NPL) sites a means whereby they would be included in the cleanup process. Rocky Flats acheived NPL status in 1989.

The Rocky Flats Cleanup Commission was created to help affected citizens understand and interpret technical cleanup information. The group bridges the gap between cleanup overseers, the Colorado Department of Health/ the U.S. Department of Energy/ the U.S. Environmental Protection Agency, and the surrounding communities. Fifteen directors work together to detechnicalize cleanup plans through factsheets, press conferences, and other means.

In addition to helping inform the communities, RFCC directors have worked to evaluate the adequacy of cleanup plans. Written comments have been prepared for the Interagency Agreement, the Interim Remedial Action Plan for the 881 Hillside and the 903 Pad (OU 2), and other cleanup documents. Members have been present at every Rocky Flats public meeting to provide comment, critique, and suggestions on cleanup plans and other related issues. Assessing the dangers associated with contamination and cleanup is also a central task for the commission.

The present fifteen directors, whose biosketches are found in the following pages, represent a high degree of expertise and a broad range of backgrounds and interests. Questions, comments, or requests for information may be directed to RFCC at the above address or by calling our office at 295-3800.

ROCKY FLATS CLEANUP COMMISSION

BOARD OF DIRECTORS

BIOSKETCHES

JOE TEMPEL: President; Member of the Rocky Flats Alliance and the Colorado Coalition for the Prevention of Nuclear War. Joe holds a BS degree in biology from the Colorado College and a masters in urban and regional planning from the University of Colorado at Denver. His main interest is cleaning up after the nuclear weapons industry. Joe has been professionally involved in assessing and mitigating impacts of major public works projects for the past seventeen years. He feels the cleanup of the nuclear weapons wastes is the biggest challenge of his career.

PAULA ELOFSON-GARDINE: Vice-President; Director of Concerned Health Technicians for a Cleaner Colorado, and a member of the Rocky Flats Alliance. Paula has reviewed, analyzed, and commented on over 20,000 pages of technical documents on the Rocky Flats Plant in the past three years with a focus on environmental, health, and safety concerns. She has been interviewed numerous times on television, radio, and in local and national news publications. Paula has written published articles and volumes on environmental issues. She feels strongly about the public's role in being involved with the governmental processes that go on around us and encourages others to write to Congress, as well as congresspersons to become involved in these issues. She holds a BS degree from Metro State College.

BARBARA MOORE: Secretary; Director of Front Range Alternative Action Group. Barb has a long record as a vocal community activist. She has reviewed many documents, articles, and reports regarding the DOE's Nuclear Weapons Complex, focusing on the Rocky Flats Plant. One of her objectives is to contribute to the environmental restoration of the Front Range area she calls home, so future generations may also live, work, and enjoy its beauty and wonder.

EVAN FREIRICH: Treasurer; Founder of Rocky Flats Truth Force and serves on the board of directors for Global Response. He has a bachelors degree in psychology from the University of Colorado at Boulder and a law degree from the University of Denver. Currently, he is an attorney in private practice in Boulder. Evan enjoys backpacking, mountain biking, skiing, and canoeing.

GALE BIGGS, PhD.: Chairman of the Rocky Flats Scientific Monitoring Panel Air Committee and a member of the American Meteorological Society, the American Association for the Advancement of Science, and the Air and Waste Management Association. Dr. Biggs' primary technical activities include research on air quality and meteorology. He holds a doctorate in meteorology from the University of Michigan and currently runs his own consulting firm, W. Gale Biggs Associates.

MARCIA BRYANT: Member of Citizens Against Rocky Flats Contamination and also Greenpeace. A citizen advocate, Marcia has worked on a variety of environmental issues, attended and spoken at public hearings, and maintained active correspondence with public office holders. An employee of Colorado Rural Legal Services in Denver, she holds a BA degree in history from Metro State College.

AGUA DAS: Agua has been a familiar figure at Rocky Flats hearings and meetings, both as a participant offering testimony and as a video chronologist of these events. His education, experience, linguistic and intellectual skills include engineering, chemistry, electronics, renewable energy, nuclear energy, law and critical thinking. Agua has been researching independent methods of measuring alpha radiation from plutonium in the environment. An author and co-author of several publications, he currently is Technical Director for Sustainable Futures Video, publisher and distributor of books on alternative and renewable energy through TIPI Workshop Books and Biomass Energy Foundation Books.

EUGENE DeMAYO, O.D.: Chairman of the Rocky Mountain Chapter of the Sierra Club. A practicing optometrist, Eugene has been involved in Rocky Flats issues since 1987, primarily through his work with the Sierra Club. In 1987, the Rocky Mountain Chapter successfully sued DOE and Rockwell International to stop the test burning of mixed hazardous and radioactive wastes in the fluidized bed incinerator. In 1989, Dr. DeMayo was instrumental in another Sierra Club suit to stop the illegal burning of mixed radioactive and toxic waste in the Plutonium Recovery Incinerator and to declare the waste as RCRA waste subject to regulation.

JOE GOLDFIELD: Mr. Goldfield is a professional engineer having worked for Manville Corporation for 31 years, 20 of which he was Manager of Environmental Engineering. An expert in air pollution control, he designed the largest fabric filter in the world and worked on the intial HEAF (High Efficiency Air Filter). Currently, he works as an independent consultant specializing in energy conservation, environmental engineering, air pollution, and industrial hygiene engineering. Mr. Goldfield holds a BS in Chemical Engineering from the City College of New York, is a member of numerous professioanl organizations, holds a number of patents, and has written for many technical publications.

KIM R. GRICE: Chairman of the Committee Against Radiotoxic Pollution. A citizen of Westminster, a Viet Nam veteran, and a real estate broker, Mr. Grice is an outspoken critic of Rocky Flats contamination. He has read over 12,000 pages of scientific and technical documents on accidents, radiation releases, monitoring, and remediation at Rocky Flats. He has written numerous articles, critiqued documents, spoken at many forums, and testified at public hearings on Rocky Flats issues. Kim received his BA in communications from Michigan State University.

TIM HITES: Member of Communities United for Environmental Safety, Greenpeace, and the Committee Against Radiotoxic Pollution. A dedicated community activist, Tim has conducted letter writing campaigns and neighborhood literature distributions. He has also spoken on behalf of local residents at Westminster City Council meetings and DOE hearings. Formerly of Iowa, Tim attended Mary Crest College and the Universtiy of Iowa.

WILLIAM A. KEMPER, PhD.: Member of the American Physics Society, the American Association for the Advancement of Science, the American Defense Preparedness Association, and the Colorado Coalition Atomic and Agent Orange victims. He holds a doctorate in Chemistry from Johns Hopkins University and served in the United States Navy. Dr. Kemper was a Radiological Safety Monitor at the first Bikini A-bomb test. After active duty, he was employed as a physicist for the USN Surface Warfare Center, and later taught physics, energy, and astronomy courses at Metro State College and the University of Colorado at Denver.

CRAIG KISH, J.D.: Mr. Kish is an attorney practicing environmental law. He worked for the Environmental Defense Fund, mainly in the area of water quality, while completing law school. Later, Craig worked for the Colorado Attorney General's office in the CERCLA litigation section, concentrating in issues surrounding the State's recovery for damage to natural resources. Currently, Craig is in graduate school completing a masters degree in environmental science.

GREG MARSH: Member of Citizens Against Rocky Flats Contamination, the W-470 Concerned Citizens, and the Air and Waste Management Association. He is a lifetime member of The Wilderness Society and American Youth Hostels. Greg holds a BS degree in Chemistry from Ohio University. He is a professional consulting Environmental Chemist/Industrial Hygienist, having worked for public utilities, engineering firms, and the U.S. EPA.

PENELOPE PEGIS: Director of the Front Range Alternative Action Group. Ms. Pegis is a psycniatric nurse in the Denver area. She was raised in Golden, nine miles south of the Rocky Flats Plant. Her concerns about the plant have increased greatly over the past seventeen years as she has observed significant numbers of peers and neighbors contracting and dying from a variety of lethal cancers. Ms. Pegis has reviewed many documents, articles and reports in preparation for her public testimony at hearings in Denver and Washington, D.C.

KEN KORKIA: Ken serves the Cleanup Commission as a Technical Assistant. He holds a BS degree in Biology from Creighton University and has taken numerous graduate level courses in human biology and public administration. His research interest are in public health, public policy analysis, and research methods. Ken draws his interest in environmental issues from having grown up near the Cotter Uranium Mill, a Superfund site in the Canon City area.