Agenda for 10th Superfund National Radiation Meeting
Albuquerque, March 30 to April 3, 2009

Location: Doubletree Hotel ***(Monday night to Thursday night)***
201 Marquette Avenue Northwest, Albuquerque, NM. 87102-2248
Phone: 1-505-247-3344 *(Main Number)*
1-800-222-8733 or 505-247-3344 *(Reservations)*
Fax: 1-505-247-7025

Dates: Monday March 30 to April 3, 2009

Monday, March 30, 2009 – WIPP/WCS Field Trip
(you ***MUST*** have Preregistered)

Sunday, March 29

Fly into Midland, Texas airport, then stay at
Sleep Inn and Suites hotel
5612 Deauville Blvd
Midland, TX 79706
Phone: 432-694-4200

Monday, March 30

5:45 am: **bus loading at Sleep Inn Midland hotel**

6:00 am: **free breakfast at Sleep Inn Midland hotel**

6:30 am: **bus departs Sleep Inn Midland hotel**

8:15 am: **bus arrives at WCS**

10:15 am: **bus departs WCS** *(box lunch eaten on the bus, 1 hour time zone change)*

10:45 am: **bus arrives at WIPP** *(tour includes 2,000 foot ride underground in elevator)*

2:15 pm: **bus departs WIPP**

3:30 pm **bus stops for dinner at La Fonda (Mexican restaurant) in Artesia, NM**

4:45 pm **bus leaves Artesia, NM**

9:00 pm: **bus arrives at Albuquerque, NM at Doubletree hotel**

Tuesday, March 31, 2009 – Opening, Removals/Counterrorism, and Survey

8:00 am **Welcome and Introductory Remarks** *(Robin Anderson OSRTI)*

8:15 am **Radiological Laboratory Sample Analysis Guides:** This presentation will address a series of Radiological Laboratory Sample Analysis Guides being developed to address topics associated with the rapid laboratory analysis of radiological samples during a response to an Incident of National Significance (INS). The *"Radiological Sample Analysis Guide for Incidents of National Significance: Radionuclides in Water" (EPA 402-R-07-007, January 2008),* provides radioanalytical laboratories with guidance on prioritization of sample analysis following a radiological incident. Analytical schemes are presented that will optimize laboratory turn-around times and throughput. Three scenarios are presented as flow diagrams and supported with detailed examples that clarify implementation. The first scenario addresses a water supply contaminated with unknown quantities of unidentified radionuclides and prioritizes samples to rapidly identify those radionuclides that pose a threat to human health and warrant implementation of protective measures. The second scenario rapidly identifies water sources that are potable under SDWA. The final scenario, an abbreviated version of the first two scenarios, can be used to expedite analysis of large numbers of samples when radioactive contaminants are known. The guide also provides EPA QA/G-4 (2006) and MARLAP (Multi-Agency Radiation Laboratory Analytical Protocols Manual, 2004) consistent guidance on generating Data Quality Objectives (DQOs) and Measurement Quality Objectives (MQOs). It outlines a method for making statistically rigorous, defensible decisions on whether analytical results exceed analytical action levels based on the MQOs and tolerable decision error rates established by Incident Command. It also provides a set of default MQOs and analytical requirements to permit laboratories to prepare in advance of an INS.

Additional *Radiological Laboratory Sample Analysis Guides* will provide guidance to laboratories, field response personnel on key considerations, radioanalytical requirements, decision paths, and default data quality and measurement quality objectives for samples from an INS. Documents under development include:

The *"Sample Analysis Guide for Radionuclides in Air"* and "*Sample Analysis Guide for Radionuclides in Soil"* provide guidance to labs to facilitate planning for an INS. Topics addressed include: rapidly prioritizing, preparing and analyzing air and soil samples; selecting and validating methods; statistically rigorous decision criteria for evaluating results; and default MQOs.

The *"Method Validation Requirements for Qualifying Methods Used by*

Radioanalytical Laboratories Participating in Incident Response Activities" establishes a protocol for validating methods for incident response based on the principles of MARLAP.

The *"Guide for Radiochemical Laboratories for the Identification, Preparation and Implementation of Core Operations Unique to Radiological Incident Response"* examines a range of operational considerations for laboratories challenged with large numbers of samples following an INS to ensure continued operation, protection of health, safety and environment and data quality.

"Gross Sample Screening Analysis" provides guidance on effectively screening samples in the laboratory for radioactivity and addresses technical considerations and strategies for screening, selecting, configuring and calibrating instrumentation and validating screening methods.

The *"Guide to Radiological Laboratory Contamination and Exposure Control*" describes in detail likely radiological contamination control and radiation exposure control challenges facing personnel at a radioanalytical laboratory following an INS. *(Schatzi Fitz-James, OEM, John Griggs, ORIA)*

9:00 am **EPA's Special Teams.** Over the past couple of years, EPA's Special Teams' managers have been meeting on a quarterly basis to coordinate EPA's radiological response support efforts. The Teams have been working together to discuss roles and responsibilities for radiological response and site support. In June 2006, the first EPA Special Teams staff workshop was held to share information and begin to develop a joint concept of operations. This workshop will be followed by another workshop, focusing on a table-top discussion, in December 2006. This presentation will focus on the Special Teams' capabilities and concept of operations for radiological response support to EPA's OSCs and RPMs. *(Sara DeCair, ORIA)*

9:45 am **Break**

10:00 am **Homeland Security Environmental Radioanalytical Laboratory Capacity/Capability Initiative.** The presentation will provide a summary of ORIA's multi – year initiative to identify and provide tools to a group of "Core" Radioanalytical Laboratories that would provide analytical surge capacity to support the Agency's response to a radiological or nuclear terrorist attack. The tools include radioanalytical laboratory analysis guidance documents; proficiency testing (PT) studies; laboratory capacity audits; and emergency response laboratory operations training. In addition, information will be presented on the ORIA/OEM initiative that resulted in these cooperative agreements being awarded to three state radiological laboratories which provided nuclear counting equipment and funding. ORIA's efforts support and are part of a broader Agency effort coordinated by OEM to establish an ERLN (Environmental Response

Laboratory Network) which would provide environmental laboratory testing capability and capacity to meet EPA responsibilities for surveillance, response, and recovery from incidents involving release of chemical, biological, or radiological agents . Key principles and features of the program design of the ERLN will be presented. *(Schatzi Fitz-James, OEM, John Griggs, ORIA)*

10:45 am **Environmental Protection Agency Airborne Gamma Emergency Mapper Project.** The US Environmental Protection Agency Airborne Spectral Photometric Environmental Collection Technology (ASPECT) program provides assistance to the first responder by providing an aerial tool to collect photographic, chemical and physical (infrared and gamma radiation) information quickly and relay this information directly to decision makers in the field. Since 2001, ASPECT has assisted the response community in over 72 incidents ranging from ammonia releases to the recent pre-deployment to supporting the Republican and Democratic National Conventions and Hurricane Ike. The aircraft is located near Dallas, Texas and is "wheels-up" within one hour of activation. EPA recently initiated the ASPECT Gamma Emergency Mapper (GEM) project to improve the airborne gamma-screening and mapping capability of ground-based gamma contamination following a wide-area radiological dispersal device or fallout from an improvised nuclear device attack. The goal is to develop the most advanced gamma-radiation detection capability mountable within an Aero Commander 680 FL airframe. The ASPECT GEM committee membership consists of members from the EPA National Decontamination Team, Environmental Response Team, Radiological Emergency Response Team, National Homeland Security Research Center, academia, a national laboratory, and the Department of Energy. Up to six 2x4x16 NaI(Tl) detectors and two 3x3 $LaBr_3$(Ce) are among the suite of detectors to be mounted in the aircraft. This presentation provides the current status, expected radiological detection capabilities, and the timeline to achieve a fully operational improved platform. *(John Cardarelli, NDT)*

11:30 am **Lunch**

1:00 pm **Abstract: Radiological Clean-up Under the Stafford Act; Sampling, Assessment, and Cleanup Criteria—This Ain't Superfund!** How and why will EPA's radiological assessment and cleanup to a Radiological Dirty Bomb differ from a Superfund cleanup? What are the sample needs, analytical necessities, reliance on direct reading instruments, data management issues, and the "optimization process?" What are the health physics solutions and technical approaches?) This presentation will explain the "Approach to RRD Response" developed by Regions 3, 4, & 5 as part of EPA's Getting to Five Strategy. *(Bill Steuteville, Region 3, and Jim Mitchell, Region 5)*

1:45 pm **Update on EPA Radiation Emergency Response Activities (post 9/11/01):**

Update on the ongoing support and response from EPA's Radiological Emergency Preparedness, Prevention and Response team during and after the terrorist attacks on 9/11/01. How have things changed, and how have they stayed the same. Focus on changes made since last February/March's Radiation meeting. *(Gregg Dempsey, ORIA-LV)*

2:30 pm **Break**

2:45 pm **Communicating Effectively During Radiological Emergencies.** What if you were asked to explain radiation exposure to the media and the public during an emergency? What would you say? Are you ready?

Effective communications during crises can make a significant difference in the outcome of an emergency. They can inspire confidence, build credibility, and, most importantly, contribute to saving lives and minimizing injury.

This highly interactive session challenges participants with a series of hands-on exercises designed to help attendees:

- Develop clear and concise messages on complex and sensitive radiation issues for the media and the public, and

- Deliver the messages effectively to the media and the public during the highly charged atmosphere in a crisis.

The session is based on EPA's *Communicating Radiation Risks: Crisis Communications for Emergency Responders*, a pocket-sized guide developed for responders and government officials who communicate with public and the media – or advise those who do – during radiological emergencies. The guide has been distributed to emergency responders nationwide and to more than 120 countries world-wide. *(Helen Burnett and/or Jessica Wieder, ORIA)*

3:30 pm **Drinking Water Standards and Recommendations (e.g., PAGs, RALs, ARARs, risk), What, Where, When.** The intermediate Department of Homeland Security's (DHS) Protective Action Guidelines (PAGs) for providing drinking water is 500 mrem/yr after a terrorist attack using a Radiological Dispersal Device (RDD) also known as a "dirty bomb" or an Improvised Nuclear Device (IND), and the same recommendation is in the draft EPA ORIA PAG Manual. The CERCLA removal program recently issued Removal Action Levels (RALs) of MCLs or 10^{-4} cancer risk for providing drinking water during removal actions at chemical sites. The CERCLA remedial program continues to use MCLs, UMTRCA groundwater standards, and 10^{-4} to 10^{-6} cancer risk as groundwater cleanup standards for radioactively contaminated sites. This presentation will provide an overview to the PAG, CERCLA removal, and

CERCLA remedial approaches to addressing contaminated drinking water. *(Sara DeCair ORIA, OEM, Stuart Walker OSRTI)*

4:15 pm **Roundtable discussion on Removal/Counterroism Issues**

4:45 am **Summary of Action Items/Issues**

5:40 pm **Adjourn**

Wednesday, April 1, 2009 – Waste Disposal and TENORM

8:00 am **EPA's Environmental Radiation Protection Standards for Yucca Mountain, Nevada.** The Energy Policy Act of 1992 gave EPA the authority to set health and safety standards for Yucca Mountain, the potential repository for spent nuclear fuel and high-level waste. It also required EPA to contract with the National Academy of Sciences (NAS) to provide the Agency with findings and recommendations, and for the standards to be based upon and consistent with the NAS advice.

In June 2001, the Agency issued 40 CFR Part 197. A number of parties, including the State of Nevada, the Natural Resources Defense Council, and the Nuclear Energy Institute, filed petitions for review of the standards. In July 2004, a Federal Court upheld EPA on all counts except for the compliance period. The Agency set a compliance period of 10,000 years for a number of technical and policy reasons. However, NAS had recommended that the standard be set for the time of peak dose within 1,000,000 years (the time that NAS estimated that the geology in the Yucca Mountain area would be stable enough to bound its behavior). In addition, in its environmental impact statement for Yucca Mountain, the Department of Energy estimated that the peak dose will occur at several hundred-thousand years after disposal. The Court ruled that EPA's 10,000-year compliance period was inconsistent with the NAS' recommendation and remanded the compliance period to the Agency.

The proposed amendments were published in the Federal Register in August 2005, at which time a 60-day public comment period started. The Agency held meetings and hearings in Nevada and Washington, D.C. during the comment period. Following the comment period, the comments were analyzed and considered. In September 2008, the amendments were finalized. This paper will describe the new requirements, including the compliance period, the dose limit, the statistical method to measure compliance, and how features, events, and processes are to be considered. *(Sara DeCair, ORIA)*

8:45 am **National management plan for (1) radioactive materials and waste: from the national inventory of radioactive waste and recoverable materials to an assessment and forward perspective of the long term management channels for radioactive waste in France; and, (2) Long lived low activity waste : the forseen disposal concept and strategy.** The purpose of the first part of this presentation is to give an overview of the main principles of radioactive waste management, briefly describing the existing channels and indicating the main research and improvement approaches. It also describes the main changes in the updated version for 2009. The second part of the presentation addresses the programme law of 28 June 2006 on sustainable management of radioactive

materials and waste provides for commissioning of long lived low activity waste in 2013. This kind of waste mainly consists of graphite waste and part of the radium bearing waste inventory. The presentation gives an overview of the disposal concept studied and the required safety criteria for the implementation of the storage. *(Colette Clemente, French Nuclear Safety Agency)*

9:30 am **Break**

9:45 am **Using computerized geographic information systems (GIS) to map and understand the processes and contamination at a site.** Computerized geographic informations systems (GIS) provide a powerful set of tools for gathering and presenting information on maps. But the software can be equally powerful for taking a first look at data and "teasing out" information that might not be apparent from tables of field data. This presentation will present some maps and graphs that were made quickly from the ArcGIS family of programs, and that helped to identify a pattern of contamination that was not easily recognized from simple tabulation of the data. *(Robert Terry, Region 9)*

10:30 am **Building and Outside Surface Dose Compliance Concentrations calculators.** Presentation and discussion of draft internet based calculational tools for establishing compliance concentrations for dose based standards that are potential ARARs. The Dose Compliance Concentrations for Radionuclides inside Buildings (BDCC) is for addressing rooms inside a radioactively contaminated building that are being cleaned up for occupation. The Dose Compliance Concentrations for Radionuclides in Outdoor Surfaces (SDCC) is for addressing streets, sidewalks, sides of buildings, and building slabs that are radioactively contaminated. The BDCC and SDCC calculators are based on the BPRG and SPRG calculators. *(Stuart Walker, OSRTI)*

11:15 am **Lunch** ***(at 11:45 will begin viewing of two videos on Navajo site, "Return of Navajo Boy" and Region 9 actions at Navajo site)***

1:00 pm **Progress on Abandoned Uranium Mines on the Navajo Nation.** Region 9 maintains a strong partnership with the Navajo Nation and, since 1994, the Superfund Program has provided technical assistance and funding to assess potentially contaminated sites and develop responses involving 27,000 square miles spread over three states (and regions) in the Four Corners area. In August 2007, the Superfund Program compiled a comprehensive GIS Database and Atlas Report with the most complete assessment to date of all known uranium mines on the Navajo Nation, let alone the country. The release of this report coincided with significant attention focused on mitigating the known problems and honing in on site-specific threats.

At the request of the U.S. House Committee on Oversight and Government

Reform in October 2007, EPA/Region 9, along with the Bureau of Indian Affairs (BIA), the Nuclear Regulatory Commission (NRC), the Department of Energy (DOE), and the Indian Health Service (IHS) developed a coordinated Five-Year Plan to address uranium contamination in consultation with Navajo Nation EPA. In December 2007, May and September 2008, Region 9 and the other agencies reported back to the Committee in implementing the Five-Year Plan.

Region 9 is aggressively addressing the most urgent risks on the reservation — uranium contaminated water sources and structures. Approximately 30 percent of the Navajo population does not have access to a public drinking water system and may be using unregulated water sources with uranium contamination. Region 9 and the Navajo Nation EPA have launched an aggressive outreach campaign to inform residents of the dangers of consuming contaminated water.

Meanwhile, by the spring of 2009, Region 9 will have conducted on-site screening evaluations at 80 AUM sites and concluded PAs at five mines. Over the next five years, Region 9 will work with Navajo Nation EPA to conduct a tiered assessment of abandoned mines and to identify mines for further evaluation. On-site screening evaluations will be conducted for 200 to 250 mines and more detailed assessments will be completed at up to 35 mines. We will then work with Navajo Nation EPA to determine appropriate courses of action for the highest priority mines as systematically as possible, but always open to surprises.

RPM Andy Bain will provide project context dealing with prioritizing more than 520 AUMs, including collaborative work on a myriad of sites with OSC's Harry Allen IV and Will Duncan III, the ups and downs of the largest underground uranium mine in the US - Northeast Church Rock Removal Action and a smattering of unregulated water sources contaminated with rad but the sources of which we have little idea. *(Andy Bain, Region 9)*

1:45 pm **<u>Norwegian/Russian presentation on uranium mine site cleanup</u>** During the former Soviet Union period, significant nuclear operations were carried out within the republics of Kazakhstan, Kyrgyzstan, and Tajikistan. These included in particular nuclear weapons testing, nuclear power development and the mining and milling of uranium. These countries are close to each other geographically. They also share a similar status as newly independent states whose regulatory authorities were only comparatively recently set up. The process of putting things right and reducing the threats is now getting under way, with the design and implementation of remediation activities, partly with international support. However, there is a significant lack in the regulatory basis for carrying out such remediation work, including a lack of relevant radiation and environmental safety norms and standards, licensing procedures and requirements for monitoring etc., as well as expertise to put such a basis into practice. Accordingly, the objective of the proposed project is to assist the relevant regulatory authorities in Kazakhstan

Kirgizstan, and Tajikistan to carry out their responsibilities, taking account of international guidance and other good practice and experience. The intention of Norwegian support program to mentioned regulatory authorities is to help the regulatory authorities to develop an effective and efficient relevant regulatory basis for radioactive waste management, under which remediation activities can be carried out safely to modern standards. *(Malgorzata Sneve, Norwegian Radiation Protection Authority, Natalya Shandala, FMBC)*

2:30 pm **Break**

2:45 pm **Radium-laced Aircraft Gauges: Coming to a Warehouse Near You**. Aircraft gauges made from the 1930's up to the 1970's often used radium phosphorescent paints on the dial faces so they would 'glow in the dark' when flying under blackout conditions. These gauges were salvaged from obsolete aircraft and also sold as surplus as needs diminished. EPA has cleaned up several radium gauge sites. This presentation will show the history of use of these gauges, how they end up, what the Agency has done about them, and what you might see if a warehouse full of gauges shows up in your EPA region. *(Gregg Dempsey, ORIA)*

3:30 pm **UMTRCA Supplemental Standards and Estimating Potential Risks to Human Health: A Case Study:** Region 4 is in the process of conducting a Remedial Investigation and baseline risk assessment of potential risks to human health from exposure to Technologically Enhance Naturally Occurring Radioactive Material (TENORM). TENORM is spread over much of the land surface of a 2500-acre site as a result of phosphate mining activities that occurred in the early to mid-1900's. Levels of Ra^{226} in the soil exceed the 5 pCi/g above background level specified in UMTRCA for residential exposures. Use of this criterion would require active remediation over much of the site to meet this ARAR. Because the site is either undeveloped or only used for commercial and industrial activities, an alternative approach to assessing the risk is being evaluated using the "supplemental standards" provided for in Subpart C of 40 CFR Part 192. This case study will provide a brief overview of the site and the "supplemental standards," as well as, factors to be considered in conducting the site-specific radiological risk-assessment. *(Brad Jackson Region 4)*

4:15 pm **Roundtable discussion on TENORM issues.**

4:45 pm **Summary of Action Items/Issues**

5:00 pm **Adjourn**

Thursday, April 2, 2009 Federal Facilities and Risk Assessment

8:00 am **Update on SRS High Level Waste Tanks.** In 2007, a Formal Dispute was intiated between EPA, DOE and SC due to DOE missing enforceable milestones regarding the cleanup of High Level Waste Tanks. The Formal Dispute was resolved quickly and new dates and additional milestones were added to the FFA. Region 4 gave a presentation regarding the dispute at the last SF Rad Meeting. Since that time, work has continued at SRS trying to move forward on the complex cleanup of the Tanks. An update will be given on the progress made and the advanced technologies deployed to accomplish the work. Significant work has been completed and unforseen issues have arisen. In addition, the presentation will give a general update on developments at SRS and how the High Level Waste Tanks play a primary role in the treatment of plutonium for the U.S. *(Robert Pope, Region 4)*

8:30 am **Sellafield - Land Quality - an Overview.** Sellafield is a nuclear licensed site situated within the United Kingdom. It is located on the North West coast of England, positioned on the west Cumbrian coastal plain, with the Cumbrian mountains of the Lake District National Park rising to the east. The site is very compact and complex. It covers an area of approximately 2.2 square miles and contains more than 1,000 facilities, all performing a wide range of tasks, which support commercial operations (fuel recycling and manufacture), waste management and decommissioning activities.

The history of the Site dates back to the 1940's. It was originally a Royal Ordnance Factory manufacturing Tri-nitrotoluene, its purpose changed from 1947 onwards, when a decision was made to develop the site to support the United Kingdom's weapons programme. As a result of the operations, contamination of land and groundwater has occurred at the site. The contamination is primarily caused by the radionuclides: H-3, Tc-99, Cs-137, Sr-90 and Pu-239. Current estimates indicate, a clean up cost of about $4.2 billion dollars, and waste volumes of almost 500 million cubic feet.

The Environment Agency is working with the site operator and co-regulators to address the issue. We have drafted a vision statement which sets out our expectations, with respect to strategy and operation, and objectives that we wish to see achieved in the near term. The operator is progressing their understanding of the liability, and is currently carrying out extensive characterisation in the inner zone of the site. The information from this work will be used to revise a conceptual model for the site, which will subsequently be used to inform development of a risk assessment. The operator also maintains a groundwater

monitoring programme, which has a number of objectives but in essence it confirms the status of groundwater contamination. Currently the operator is taking stock of their strategy and carrying out a preliminary review of the options available for remediation. *(Stephen Tandy United Kingdom Environment Agency)*

9:15 am **US EPA – EA Collaboration.** The Environment Agency is responsible for the protection and enhancement of the environment in England & Wales. It is a public non departmental body created by the Environment Act 1995. It is funded by a combination of government sponsorship and statutory charging. We have a staff of 12,500 people and an annual budget of about $1.4 Billion. Our organisation, which covers a diverse range of duties, includes a Nuclear Regulation Group, which is responsible for the environmental regulation of nuclear licensed sites.

We have set up partnering arrangements and/or links with several regulatory organisations, both nationally and internationally. These are at differing levels, and maturity. We are seeking to further develop our links with our colleagues in the US Environmental Protection Agency, following a recent visit that we hosted to the UK that focused on the decommissioning and clean-up taking place at Sellafield. We believe that it would provide benefits to both organisations through sharing of experience, knowledge and understanding of regulation. There are challenges associated with developing greater collaborative working, however if the right balance can be struck, then the best outcome can be achieved for the parties concerned. *(Rob Pope Region 4, Stephen Tandy United Kingdom Environment Agency)*

9:45 am **Break**

10:00 am **Santa Susana Field Laboratory, Simi Valley, CA.** The 2850-acre Santa Susana Field Laboratory (SSFL) site is located in Simi Valley, California. It is divided into four areas each having different owners and operators. Boeing owns and operates the majority of the areas. Activities at the site have included rocket engine research, assembly and testing, and nuclear energy research and development conducted by Boeing, DOE and NASA. Activities at the site over many years have resulted in chemical and radiological contamination of soil and groundwater. DOE is investigating radiation issues at Area IV of the SSFL site where they operated the Energy Technology Engineering Center (ETEC) and is required to complete a court ordered EIS. The State of California has the lead for chemical contamination issues on all four areas of the SSFL site. The State is regulating SSFL under authority of the Resource Conservation Recovery Act (RCRA). State legislation (SB990) requires cleanup of the site to strict rural residential standards and upon cleanup that it be maintained as open space. The State has initiated negotiations with Boeing for the full cleanup and the eventual turnover of the clean property to the State for use as open space. These

negotiations are ongoing.

EPA updated its PA/SI for the site in 2007 and the site qualified for listing on the National Priorities List (NPL). In December 2007, EPA sent a letter to the State of California requesting its position on proposed listing of the site. In January 2008, the State requested a 6-month deferral so that negotiations could continue with Boeing for cleanup of the site to rural residential standards. In March 2008, EPA concurred with the State's request for a listing deferral. EPA stated that if negotiations with Boeing fail, State support for NPL listing would be sought. On July 11, 2008, the State requested an additional 6-month deferral to continue negotiations with Boeing. The state would then provide its position on listing by January 15, 2009. Based upon the state's second deferral request, EPA will not pursue NPL listing until 2009.

In the meantime, DOE's FY2008 budget included an earmark (HR2764) for a radiological survey of the Area IV portion of the site. The earmark required DOE to enter into an agreement with EPA for the survey. On July 24, 2008, EPA signed an IAG with DOE to transfer $1.5 million to EPA to fund an EPA-led study to determine background values for radiological contaminants in the vicinity of the Santa Susana site. The background study is a necessary first step in determining site risks and it will form the basis for future site characterization. The background study work is ongoing and EPA intends to complete the study by the end of 2009. Under the IAG, EPA is also developing a detailed scope, schedule and cost estimate for the initial phase of the radiological study of Area IV and the adjacent buffer zone. EPA has targeted late November 2008 for completion of the scoping document. However, EPA work on the survey itself cannot move forward until the site is placed on the NPL or EPA receives funds to perform the work by some other means. The site has very high community and congressional interest. *(Claire Trombadore Region 9)*

10:45 am **<u>Nuclear Metals Superfund Site, Concord, MA.</u>** The Nuclear Metals Superfund Site consists of approximately 46 acres, which includes various buildings which altogether have a current footprint of approximately 185,000 square feet. The Site owner/operator, Starmet Corporation ("Starmet"), is licensed by the Commonwealth of Massachusetts under an agreement state license to possess radioactive materials at the Site. Starmet, however, is no longer licensed to manufacture or process products containing radioactive material. Starmet and related entities (the "Starmet Parties") currently perform small-scale operations at the Site, including production of beryllium-aluminum alloys and steel powders. Starmet has signed a Consent Decree with the state to vacate the facility; however, they have not left the site to date. Starmet is also engaged in discussions with EPA regarding its departure.

The majority of these buildings are contaminated with depleted uranium. Levels

of radioactivity found on floors and walls range from 4,000 dpm/100 cm2 to as high as 4 million dpm/100 cm2. A small fire occurred at the facility in June 2007. Based on various investigations following the fire, the Concord Fire Department requested assistance from EPA to remove hazardous materials from the facility due to a threat to public health and safety. EPA recently finished a time-critical removal action which addressed the hazardous and flammable materials in the building. Shortly after the fire, EPA determined that an Engineering Evaluation/Cost Analysis (EE/CA) was necessary to address the deteriorating facility building and its contents due to the threat that the building and its contents pose to public health or welfare or the environment. The EE/CA was completed in February 2008. Since that time, EPA has issued an Action Memorandum for a Non-Time Critical Removal Action (NTCRA) in September 2008 for the demolition of the facility buildings and on-site or off-site disposal at a cost of approximately $64 million. EPA expects to begin negotiations with potentially responsible parties for the performance of a NTCRA in early 2009. Meanwhile, EPA is also conducting an RI/FS for the entire site with an expected completion date of the end of 2010. *(Melissa Taylor Region 1)*

11:30 am **Lunch**

1:00 pm **Application of Monitored Natural Attenuation for Cleanup of Radionuclides in Groundwater:** A retrospective analysis was conducted to evaluate the unsuccessful performance of an MNA remedy for uranium contamination in groundwater at a Superfund site in Richland, Washington. The primary factors that limited the accuracy of contaminant transport model projections at this site was an inadequate characterization of the impact of temporal variations in groundwater hydology and chemistry, along with an incomplete characterization of residual contamination in the vadose zone. Both factors contributed to greater flux of uranium through the saturated aquifer over that predicted by the contaminant transport model. Additional efforts to characterize the dynamics of the hydrologic system, the distribution and characteristics of residual uranium contamination in vadose soils, and identification of the chemical factors controlling uranium transport in groundwater have resulted in a more accurate Conceptual Site Model and, ultimately, the evaluation of in-situ technologies to control uranium release from residual source areas. The lessons learned from this retrospective analysis will be compared to technical recommendations that have recently been proposed to establish a consistent framework under CERCLA for evaluating the suitability of Monitored Natural Attenuation (MNA) as a component of the remedy for restoration of groundwater contaminated with radionuclides. These recommendations, provided in Volume 3 of the reports addressing MNA for inorganic nts to assess the role of radioactive decay and immobilization for attenuation of radionuclides within a groundwater plume. *(Robert Ford, ORD)*

1:45 pm **Overview of the Environmental Management Budget from FY 2009 and Beyond.** In December 2007, DOE-EM met with EPA to discuss the FY 2009 potential budget shortfall and the fact that based on the President's budget, DOE-EM would not be able to meet its compliance milestones. OSWER, OECA and Regional staff have been meeting with the EM staff to discuss the FY 2009 and future budgets. DOE has asked for EPA's involvement in the formulation of the FY 2010 budget. The purpose of this presentation is to present an overview of the DOE-EM budget and to discuss how EPA will be involved in the budget formulation process from the Regional and Headquarters perspective. *(Monica McEaddy FFRRO)*

2:30 pm **Break**

2:45 pm **Revised EPA Radiogenic Risk Projections.** EPA is revising its estimates of cancer incidence and mortality risks due to low doses of ionizing radiation for the U.S. population. Projections for specific cancer sites, as well as their scientific basis, are described in the draft report, *EPA Radiogenic Risk Models and Projections for the U.S. Population*. The draft report was sent for SAB review in late 2008. Subsequent to publication of this report, EPA will use its revised risk models, together with International Commission on Radiological Protection (ICRP) dosimetric models to update the radionuclide risk coefficients in Federal Guidance Report 13 (1999).

The radiogenic risk estimates for low linear energy transfer (LET) ionizing radiation (IR) in the draft report are based primarily on models developed by the National Research Council of the National Academy of Sciences (NAS). These risk models are described in the NAS report (BEIR VII), which reviewed recent evidence on health risks from low-level, low-LET IR. The BEIR VII risk models are based on updated analyses of epidemiological data on Japanese A-bomb survivors (follow-up period 1958-1998), as well as other data. EPA's current estimates of radiogenic risk – also based primarily on analyses of data from A-bomb survivors – were developed over 15 years ago. For uniform whole-body exposures of low-dose gamma radiation to the entire population, the new EPA cancer incidence risk coefficient is 1.01×10^{-1} Gy^{-1} (90% CI: 7.0×10^{-2} to 2.4×10^{-1}), and the corresponding coefficient for cancer mortality is about one-half that for incidence: 5.18×10^{-2} Gy^{-1} (3.5×10^{-2} Gy^{-1} to 1.2×10^{-1} Gy^{-1}). This represents a 20% increase for incidence and a 10% decrease for mortality compared to the current EPA risk coefficients. Risks for specific sites are important for ingestion or inhalation of radionuclides that concentrate in individual organs. For most cancer sites, the new EPA risk projections for incidence are not very different from the risk projections in the current version of FGR 13. Exceptions include female lung, female bladder, thyroid, and kidney (increased); and female colon cancer (decreased). Although the main focus here is, like BEIR VII, on low-LET

risks, we also consider cancer risks from high-LET radiation (alpha-particles) and from lower energy photons and electrons, which may convey a higher risk than the higher energy gamma rays irradiating the LSS cohort. *(David Pawel ORIA*)

3:30 pm **Navajo Radioactive Structures Removal Assessment.** For the past year, EPA has been engaged in multi-media assessment and mitigation of human exposure to radiation and radionuclides. This work is largely a response to a Fall 2007 congressional subcommittee hearing on the health impacts of uranium contamination on the Navajo Nation.

Between December 2007 and April 2008, EPA Region 9, with the capable assistance of the Region 5 FIELDS Team, conducted radiological scanning surveys at approximately 113 structures at 56 homesites on the Navajo Nation. In each structure, EPA measured gamma radiation rate and exposure as well as radon. At each homesite or residential property, EPA also measured gamma radiation logging a GPS location for each reading using a Rapid Assessment Tools (RAT) suite with a ratemeter coupled with a 3x3 sodium iodide detector. This paper will explain how decisions were made whether or not to remediate each structure and homesite based on the results that were collected during the field effort.

EPA selected conservative external gamma trigger levels to reduce the risk of missing contaminated structures and homesites in an attempt to find the most expedient and cost-effective way to address multiple types of radiation exposure. Two separate but complimentary approaches were used to determine remediation trigger levels (one for the structures and one for the yards). The paper will discuss the process of data collection and analysis that lead to our conclusions. As of November 2008, Region 9 has completed demolition of 27 structures and 12 residential yards based on our conclusions. *(Harry Allen and Will Duncan Region 9, Brian Cooper Region 5)*

4:15 pm **Meeting Evaluation**

What worked?
What needs to be changed?
Location for the next meeting?

5:00 pm **Adjourn**

Friday, April 3, 2009 Mining/DOE Sites Field Trip (you ***MUST*** have Preregistered)

Friday April 3

5:15 am	**Bus loading at Doubletree Albuquerque Hotel** *(You should have already signed up for the field trip)*
5:30 am	**Bus departs Doubletree Hotel for United Nuclear Corporation Site** *(Box breakfast eaten on the bus)*
8:00 am	**Bus arrive at United Nuclear Corporation Site**
8:05 am	**Overview discussion of tour in United Nuclear Corporation office**
8:30 am	**Tour begins at United Nuclear Corporation Site** *(hiking boots recommended)*
9:30 am	**Tour ends, bus departs for Northeast Church Rock Site**
9:35 am	**Bus arrives at Northeast Church Rock Site**
10:35 am	**Tour ends, bus departs for Sandia National Laboratory** *(lunch eaten on the bus)*
1:20 pm	**Bus arrives at Sandia National Laboratory 800 Administration Building** ***(those with early flights catch taxis here for 15 minute ride to airport)***
1:30 pm	**Tour begins at Sandia**
2:30 pm	**Tour ends, bus departs for airport**
2:45 pm	**Bus arrives at airport**
3:15 pm	**Bus arrives at hotel**