

CRESP UPDATE: SAVANNAH RIVER

L E T T E R

Vol. 2 No. 6
November 1997

INSIDE

Lead Article 1

TASK GROUPS:

Ecological Hazard Identification 1

Occupational Safety & Health 2

Social, Land Use, Demographic, Geographic and Economic 3

Stakeholder Outreach and Communication 3

Other Notes 4

CRESP 4

Integrating Risk, Restoration and Future Use of SRS
by Lynn Waishwell, Ph.D.

A workshop was held at SRS on September 10 and 11 to enhance ideas on how to achieve an integrated scientific framework for site restoration. Eighty participants heard presentations which provided content and context, and then discussed major conference themes in small groups. Participants included representatives from the sponsoring agencies, USEPA, the SRS-Citizens Advisory Board, and the US Geologic Survey. The workshop was jointly sponsored by the Department of Energy-SRS, the Consortium for Risk Evaluation with Stakeholder Participation (CRESP), Savannah River Ecology Laboratory (SREL), and Westinghouse Savannah River Company (WSRC/Bechtel).

Participants were asked to discuss the types of scientific information needed to achieve accurate risk estimates and selection of effective restoration methods. Specific questions were: What type of scientific information and framework development is essential to achieve the restoration of the individual components within the different spatial scales at SRS? How do we encourage the application of new science to fill data gaps and achieve restoration goals? How do we prioritize remediation strategies to account for both sources and receptors? Recommendations generated by the participants reflected seven major themes: the goals of restoration, use of different spatial scales in risk assessment and restoration decisions, issues specific to SRS for use in risk assessment, specific evaluation tools

and techniques, ecological risk assessments, and the application of background levels and uncertainty in risk evaluations and restoration. As the issues involved are complex, the workshop gave specific attention to communication needs.

Most considered the workshop a major success because it brought together a diverse group of technical experts, scientists, government representatives and community members. They discussed the best strategies for using science to achieve effective restoration for SRS. A final report will be available in the near future. Please contact Ursula Wolf (uwolf@rci.rutgers.edu) if you have questions or would like a copy of the final report.

Ecological Hazard Identification Task Group

The Ecological Hazard Identification Task Group is proceeding with its three main objectives: 1) to develop bioindicators of ecological health that can also be used to assess human health risk; 2) to develop ecosystem bioindicators, such as the Index of Biotic Integrity; and 3) to assess the importance of ecological services.

Bioindicators of Ecological Health

Our work with bioindicators examines the use of wood ducks, mourning doves, and raccoons for both ecological and human health risk assessment. The Task Group determined that eggs and egg shells of wood ducks can be useful for biomonitoring. We found that the levels of mercury are sufficiently low and that

they do not pose a problem to either the

ducks themselves, or to human consumers. The work with mourning doves indicates that there would be human health concerns with respect to cesium if dove hunters ate large quantities of doves that lived on drawn-down Par Pond. Otherwise, levels of cesium and heavy metals are sufficiently low and do not pose a problem to the doves or to human consumers. The human health risk assessment of eating mourning dove meat will be presented at the Society of Risk Analysis Annual Meeting in December, 1997.

The work with raccoons is proceeding on schedule. Tissues from raccoons were collected from two locations at SRS. One location has large quantities of fly ash on the surface, the other is a comparison site. Road kills were also collected from outside of SRS. The tissues were sent to Rutgers University, and analysis for mercury levels will begin soon. Cesium levels in these raccoons will be determined at SREL (in collaboration with I. L. Brisbin and K. Ganes). Since raccoons feed on a wide variety of foods and move over large distances, we expect them to be useful bioindicators. Further, raccoons are widely distributed over the DOE complex, and are hunted extensively outside of the site.

Ecosystem Bioindicators. The work with the Index of Biotic Integrity is progressing. The Task Group is currently collecting fish and frog samples from a number of streams and wetlands on SRS. The Index of Biotic Integrity is a method of risk assessment which evaluates population and ecosystem structure and health. This is a time-consuming project, and is being led at SREL by Dr. Joel Snodgrass. Additionally, the Task Group is evaluating the technical difficulties of using frogs. As they ingest dirt with their food, the soil that remains in their stomachs may complicate analysis.

Ecological Services. The Task Group interviewed the general public, hunters and fishermen, residents of Aiken, and hunters who actually hunt on SRS. We wanted to determine recreational rates and to assess perceptions of future land use preferences and ecological services at SRS. The results of the interviews conducted with people attending the Columbia Mayfest were published in the September issue of the *Journal of Toxicology and Environmental Health*, and is available from CRESP. We found that hunters, fishermen and people interviewed at the Columbia Mayfest engage in recreational activities more than the 14 days a year that DOE assumed in their future land use report. Of men surveyed at the Palmetto Sportsmen's Show, a significant proportion of the black men interviewed engaged in fishing more than 40 days a year. The results from all three groups indicate that the highest rated preference of land use is for a National Environmental Research Park, followed by hiking, camping, hunting and fishing. This work is done in collaboration with W. Gibbons at SREL. A comparison study is being conducted at the Idaho National Engineering and Environmental Laboratory (INEEL) in cooperation with D. Roush. The Task Group interviewed four groups in Idaho: people at a Fishermen's Breakfast; people at festivals in two different towns; and people attending a Shosone-Bannock Festival at Fort Hall, which included a large proportion of Native Americans.

Another current project of the Task Group consists of interviewing people who are fishing along the Savannah River to understand local fishing and consumption patterns. This project will also analyze the level of contaminants in different types of fish. A pilot study in the Fall of 1996 was used to develop a protocol for fish collection for analysis of cesium, mercury and other contaminants. We hope to have a better understanding of both fishing behavior, consumption patterns, and cooking methods by late Fall of this year. To date, we have interviewed over 200 fishermen along

the Savannah River, and presented our preliminary results to the respective state and federal agencies (EPA) as well as DOE on September 30, 1997.

Preliminary results indicate substantial individual fishing activity along the river by both blacks and whites, with an average of 13 ozs. of fish consumed per meal.

We welcome any comments or questions regarding this research. These can be directed to Joanna Burger (burger@biology.rutgers.edu).

Occupational Safety and Health Task Group

The Task Group is recognizing increasing concern about the amount of Environmental Management work performed by certain subcontractors who may not have the benefits of a full-service occupational safety and health program in place. Contractors interviewed by the Task Group voiced concerns about their need to develop sophisticated Health and Safety Plans (HASPs) which would require the investment of funds to hire specialists and consultants. Developing a registry of these subcontract workers to track hazardous exposures or provide future health information is becoming a priority. Accordingly, the Task Group began its pilot project to see what information would make such a registry feasible, and also how such information should be stored to make it accessible years in the future without compromising individual privacy.

This issue of confidentiality is of world-wide concern in the field of medicine and public health, as more and more personal information is becoming

computerized. Maintaining the integrity and confidentiality of computerized records has become a priority of the American Medical Informatics Association.

Dr. Gochfeld presented a talk on the development of a registry of EM workers at the September 10 - 11 conference, "Integrating Risk, Restoration and Future Use of SRS." He discussed the kinds of data that should be gathered in the proposed registry in his keynote address entitled, "Monitoring Remediation Workers," at the Annual Meeting of the DOE Laboratory Directors on September 12. He may be contacted via e-mail (gochfeld@eoysi.rutgers.edu).

Social Land Use, Demographic, Geographic, and Economic Task Group

The Task Group is currently engaged in a variety of projects to study land use and economic impacts of nuclear weapons facilities on their surrounding regions. The first project is a survey of local and county fiscal officers from around the five largest DOE sites: SRS, Oak Ridge, Hanford, Idaho National Environmental Engineering Lab, and Rocky Flats. The survey seeks information about economic impacts of the site, future use preferences and local participation in planning efforts.

The second project of the Task Group, in conjunction with the Stakeholder Outreach and Communication Task Group, is the examination of the newspaper coverage of SRS and Rocky Flats to understand how the papers characterize risks, trust and potential impacts associated with the two sites. Newspapers reflect local, regional, and national perspectives.

The third project underway is to develop a detailed example of land

use and future use planning at the Rocky Flats site. Interviews with local stakeholders and a review of reports and plans are currently being conducted. The Task Group will prepare a report later this Fall and draw comparisons with SRS land use and planning issues.

The fourth project is to examine industrial growth in the regions around some of the largest DOE sites and assess the impact of the sites on the ability of the regions to attract different types of industry. We are also examining the process of transitioning DOE control into some other public or private use at about 75 of DOE's smaller sites. As a result, the Task Group will offer recommendations that might facilitate reuse at the larger sites. Full reports on these two ongoing projects will be out next year.

Last, we are conducting a series of detailed economic analyses of the impacts of DOE decision making on jobs, income and productivity in the regions around the largest sites. The Task Group has prepared three reports describing the economic-based model currently used and demonstrates how this model evaluates the impact of a hypothetical new facility at SRS (Report #11), of increasing or decreasing the EM budget at all the sites (Report #12), and of adding DOE money for infrastructure and education in the regions (Report #13). Presently, the Task Group is examining the effects of spending more money in the near-term to finish cleanup earlier.

We will soon begin to use a more detailed model that has been built especially to capture the impacts of SRS on the surrounding counties, South Carolina and Georgia. The model can be used to understand the economic impact of bringing new industry into local communities. We welcome suggestions from the public on uses and examples for this model. You may contact Mike Greenberg (mrg@rci.rutgers.edu) for more information and to obtain copies of

the reports.

Stakeholder Outreach and Communication Task Group

In cooperation with the SLUDGE Task Group, we are analyzing the ways in which local and regional newspapers characterize how events at two DOE sites, SRS and Rocky Flats, are reported. Of special interest is to understand how risks and hazards are described, how their impacts are perceived and to identify the people and agencies that are used as sources of information. The Task Group is also working with other CRESP Task Groups to provide feedback and recommendations for a risk communication plan proposed by the local DOE contractor.

In December, both CRESP-EOHSI and CRESP-UW will meet to plan a national strategy to disseminate information about CRESP which will meet the needs of local and national interests. Plans include developing a variety of information sheets about specific CRESP research, and placing materials in locations easily accessible to local communities. You may contact this Task Group via e-mail (Iwaishwe@eoysi.rutgers.edu).

Other Notes **Cresp Seminars**

On October 16, 1997, K. Probst, MS, Senior Fellow for Resources for the Future, presented the seminar "Long Term Stewardship at the Nations Nuclear Weapons Sites: The Challenges Ahead".

On November 7, 1997 Joanna Burger, Ph.D., Division of Environmental Health, EOHSI and Department of Biological Sciences, Rutgers University presented the seminar, "Albatrosses, Terns and Midway Island".

CRESP

The Consortium for Risk Evaluation with Stakeholder Participation (CRESP) is a university-based national organization created specifically to develop a credible strategy for providing information needed for risk-based cleanup of complex contaminated environments, especially those for which the Department of Energy is responsible. The Consortium specifically responds to the request by the Department of Energy and the National Research Council for the creation of an independent institutional mechanism capable of integrating risk evaluation work. As a result of a national competition, a five-year cooperative agreement was awarded to CRESP in March of 1995. "CRESP UPDATE" is one approach that we are using to share research plans and programs with SRS stakeholders.

If you would like to be added to the mailing list for this publication, please send your name, address and telephone number to:

CRESP UPDATE
EOHSI-PERC Room 236
170 Frelinghuysen Road
Piscataway, NJ 08855-1179

CRESP Information

If you would like information about CRESP or any of the activities described, contact Lynn Waishwell, Director of Outreach and Communication at 732-445-0220. She would be happy to facilitate your dialogue with Task Group Leaders.

CRESP Task Group Leaders at EOHSI

Data Characterization/Statistics
Dan Wartenberg, Ph.D.

Ecological Hazard Identification
Joanna Burger, Ph.D.

Exposure Assessment
Paul Lioy, Ph.D.

Health Hazard Identification
Michael Iba, Ph.D.

Occupational Safety and Health
Michael Gochfeld, M.D., Ph.D.

Remediation & Technology
David Kosson, Ph.D.

*Social, Land Use, Demographic,
Geographic & Economic*
Michael Greenberg, Ph.D.

Stakeholder Outreach & Communication
Audrey R. Gotsch, Dr.P.H.

CRESP Update

