

October 16, 2006

Dear Stakeholder:

**SUBJECT: ACNW WORKING GROUP ON FUTURE VOLCANISM AT THE
PROPOSED NUCLEAR WASTE REPOSITORY AT YUCCA MOUNTAIN**

We invite you to participate in the Advisory Committee on Nuclear Waste (ACNW) Working Group meeting on the "State of Knowledge Regarding Potential Igneous Activity at Yucca Mountain." This meeting will be held at NRC headquarters in Rockville, Maryland during February 13-14, 2007. A draft prospectus for this meeting is enclosed. The ACNW is preparing a White Paper in response to a Commission request to provide an analysis of the current state of knowledge regarding igneous activity that can be used as a technical basis for decision-making. This report is intended to address the likelihood, consequences, and health effects of potential igneous activity at the proposed high-level radioactive waste repository at Yucca Mountain, Nevada, by summarizing the state of knowledge currently available in documents and published materials from stakeholders and interested parties. The February 2007 Working Group meeting will help review the breadth, depth, and accuracy of a draft of the White Paper report to the Commission, so that a final version of the document can be prepared. The draft report will be sent to participants in sufficient time prior to the meeting to allow adequate review. We invite you to send one or more representatives to participate and give a presentation at the meeting.

The Working Group meeting will permit staff from the DOE, NRC, State of Nevada, and other stakeholders to present the technical basis for their views on igneous activity at Yucca Mountain and provide them an opportunity to recommend revisions to the White Paper. Presenters are asked to also summarize the results of new volcanism-related work. In addition, a group of distinguished experts will provide an overview of the challenges facing the technical decision-making on igneous activity at Yucca Mountain and the status of knowledge of relevant volcanic features, events, and processes. These experts will participate in a panel discussion on the completeness and quality of the content of the report.

The primary questions to be addressed by stakeholders, interested parties, and panelists at this meeting are:

Does the ACNW report on the technical basis of igneous activity probability and consequences address the risk-significant topics related to potential igneous activity at Yucca Mountain?

Does the ACNW report adequately capture the views of the interested parties with respect to the technical basis for decision-making on these topics, including definitions of volcanic events, geologic periods of interest in predicting probability, igneous activity probability, magma/drift interaction leading to extrusive and intrusive scenarios, potential consequences for the risk from a high-level waste repository, etc.? If not, the positions detailed in the report should be clarified by presenters, preferably with written position papers.

Please contact me to confirm whether you can send representatives to our Working Group meeting. We very much look forward to your participation. If you need additional information, please contact either Neil Coleman (301-415-7656; nmc@nrc.gov) or Antonio Dias (301-415-6805; afd@nrc.gov) of my staff.

Sincerely,

/RA/

John Larkins
Executive Director

Enclosure: As stated
cc: M. Ryan, ACNW

ACNW Working Group

The State of Knowledge Regarding
Potential Igneous Activity at Yucca Mountain**INTRODUCTION**

The ACNW will convene a working group meeting in early 2007 to review the state of knowledge regarding risk from a potential igneous event at Yucca Mountain. This review will support the technical basis for the Commission's decision making on the risk from igneous activity as described in the following charge to the ACNW from the Commission:

"The Committee should provide the Commission with an analysis of the current state of knowledge regarding igneous activity which the Commission can use as a technical basis for its decision making." SRM March 7, 2006

The Committee is preparing a report summarizing the state of knowledge available in documents and published materials of stakeholders and interested parties regarding the likelihood, consequences, and health effects of potential igneous activity at the proposed high-level radioactive waste repository at Yucca Mountain, Nevada. The Working Group meeting will review the breadth, depth, and accuracy of a draft of the report to the Commission, providing information for revising the draft document into a final report. The draft report will be made available to participants, DOE, NRC, the State of Nevada, and other stakeholders in sufficient time prior to the meeting to allow for their review and comment. The ACNW will take comments on the draft report into account and will note differing views about key topics.

As part of the Working Group, a panel of distinguished scientists and engineers will provide an overview of the challenges facing the technical basis for decision making on igneous activity at Yucca Mountain and the status of knowledge of relevant volcanic features, events, and processes. In addition they will participate in a panel discussion on the completeness and quality of the content of the ACNW's report.

The primary questions to be addressed by stakeholders, interested parties, and panelists at this meeting are:

- Does the ACNW report on the technical basis of igneous activity probability and consequences address the risk-significant topics related to igneous activity at Yucca Mountain?
- Does the report adequately capture the views of the interested parties with respect to the technical basis for decisionmaking on these topics, including definitions of volcanic events, geologic periods of interest in predicting probability, igneous activity probability, magma/drift interaction leading to extrusive and intrusive scenarios, potential consequences for the risk from a high-level waste repository, etc.? If not, the positions detailed in the report should be clarified by presenters, preferably with written position papers.

MEETING AGENDA

Opening Statement

The chairman of the working group session will open the session with introductions and remarks to set the stage for the presentations, comments from participants, and the panel discussion.

Keynote Presentations

Distinguished scientists well versed in the challenges presented by potential igneous activity at the proposed Yucca Mountain repository will present keynote addresses to provide an overview of the challenges facing the technical decision making on igneous activity at Yucca Mountain and the status of knowledge of relevant volcanic features, events, and processes. These presentations will be 30 minutes in length followed by ~20 minutes of questions and discussion among the Committee, panelists, and the audience.

The general topics are:

- Global view of igneous activity and general challenges associated with volcanic predictions and the current state of the science.
- Volcanic history of Yucca Mountain region and implications for the risk triplet.
- Nature and prediction of eruptive processes and relationship to risk from the proposed Yucca Mountain repository.
- Magma/repository/container processes in both the eruptive and intrusive scenarios and implications for risk from igneous activity at the proposed Yucca Mountain repository. Thermal and mechanical magma/container interactions as a result of igneous intrusions into the repository drifts

Overview of the technical bases for NRC's positions on the risk from igneous activity at Yucca Mountain and review of the agency's performance assessment inputs and results for igneous events.

The NRC staff will be asked to review the technical bases for their input parameters, and models for determining the probability of an igneous event intersecting the repository, interaction of magma with the repository and waste containers, ash redistribution, and dose models. Staff will comment on the breadth, depth, and accuracy of the ACNW's draft report on igneous activity as it pertains to the status of current NRC findings. The NRC also will be asked to discuss the goals and schedules for ongoing igneous activity studies by the NRC and areas where questions remain and additional information has been requested from DOE.

The NRC staff also will be asked to review their performance assessment inputs and results from both intrusive and extrusive igneous scenarios, indicating times of greatest potential hazard from volcanism and the results of sensitivity studies to determine the most important parameters to risk from an igneous event.

Overview of the technical bases for positions taken with regard to the nature, probability and consequences of igneous activity at Yucca Mountain and review of performance assessment inputs and results for igneous events.

Stakeholders, expert panel participants, and other interested parties exclusive of the NRC will be asked to review their approaches, input parameters, and models for determining the probability of an igneous event intersecting the repository, interaction of magma with the repository and waste containers, ash redistribution, and dose models as appropriate. Participants will comment on the breadth, depth, and accuracy of the ACNW's draft report on igneous activity as it pertains to the status of their findings. As appropriate, participants will review their performance assessment inputs and results from both intrusive and extrusive igneous scenarios, indicating times of greatest potential hazard from volcanism and the results of sensitivity studies to determine the most important parameters to risk from an igneous event.

Overview of the previous and progress on the ongoing PVHA-Update elicitation, including the most recent geophysical mapping, drilling, and dating of magnetic anomalies in the Yucca Mountain region.

Panel Discussion:

Following the presentations, a panel will review the material presented and offer their expert opinions on the technical breadth, depth, and quality of the work presented as it pertains to the risk from potential igneous activity at Yucca Mountain. Questions to be addressed include:

- Has an effective and accurate understanding of the various views on volcanism been identified and documented in the ACNW report?
- Have the risk significant topics regarding igneous activity been identified?
- Are the technical bases for positions taken for determining risk from igneous activity at Yucca Mountain scientifically correct?
- Are there risk-significant topics regarding igneous activity that have not been adequately addressed considering the current state of the science? If so, how can they be addressed?

Public Comments: Opportunities for comment will be given to attendees, consistent with the purpose and objectives of the working group session.

Closing Comments: The working group will summarize the results of the working group and discuss possible follow-up activities.

Letters to: R. Loux, E. Sproat, and J. Strosnider

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From: John Larkins

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