

**U.S. DEPARTMENT OF ENERGY
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT**

**PRESENTATION TO
THE NUCLEAR WASTE TECHNICAL REVIEW BOARD**

SUBJECT: ARCHAEOLOGICAL RESOURCES

PRESENTER: LONNIE C. PIPPIN

**PRESENTER'S TITLE
AND ORGANIZATION: RESEARCH PROFESSOR
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APRIL 24, 1990

ARCHAEOLOGICAL STUDIES PROGRAM

OBJECTIVE

- **MINIMIZE ADVERSE EFFECTS TO HISTORIC PROPERTIES DURING SITE CHARACTERIZATION IN ACCORDANCE WITH THE PROGRAMMATIC AGREEMENT BETWEEN DOE AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION**

TECHNICAL APPROACH

- **REGIONAL PERSPECTIVE**
- **CULTURAL ECOLOGY**

TECHNICAL QUESTIONS

- 1. WHAT ARE THE POTENTIALLY AFFECTED CULTURAL RESOURCES?**
- 2. WHAT IS THE SIGNIFICANCE OF THE CULTURAL RESOURCE?**
- 3. WHAT ARE THE POTENTIAL EFFECTS TO THE CULTURAL RESOURCE RESULTING FROM SITE CHARACTERIZATION ACTIVITIES?**
- 4. HOW WILL POTENTIAL EFFECTS OF SITE CHARACTERIZATION ACTIVITIES TO THE CULTURAL RESOURCE BE MITIGATED?**

TECHNICAL QUESTION 1: WHAT ARE THE POTENTIALLY AFFECTED CULTURAL RESOURCES?

TECHNICAL APPROACH

- **CONDUCT LITERATURE REVIEW, MAKE RECORDS SEARCHES, AND CONTACT RELEVANT AGENCIES**
- **CONDUCT PREACTIVITY SURVEY PROGRAM FOR PLANNED LAND-DISTURBING ACTIVITIES**
- **CONDUCT PROJECT AREA SURVEY PROGRAM FOR INADVERTENT LAND-DISTURBING ACTIVITIES**

TECHNICAL QUESTION 1 (CONTINUED)

STATUS AND ACCOMPLISHMENTS

- **LITERATURE REVIEW COMPLETED IN 1982**
- **EFAP FOR CULTURAL RESOURCES:
ARCHAEOLOGICAL COMPONENT RELEASED 8/88**

TECHNICAL QUESTION 1 (CONTINUED)

● SURVEYS

- SINCE 1978, 10,000 ACRES HAVE BEEN SURVEYED AND 440 SITES HAVE BEEN IDENTIFIED**
- LARGE PORTION OF YUCCA MOUNTAIN PROJECT AREA SURVEYED IN 1982**
- YUCCA WASH, MIDWAY VALLEY, AND FORTY MILE CANYON SURVEY AREAS COMPLETED IN 1988**
- PLANNED SAMPLE SURVEYS IN LOWER FORTY MILE WASH, SOUTHWEST YUCCA MOUNTAIN AREAS TO BE CONDUCTED DURING NEXT SIX MONTHS**
- ADDITIONAL PREACTIVITY SURVEYS WILL BE CONDUCTED AS REQUESTED IN ADVANCE OF SITE CHARACTERIZATION ACTIVITIES**

TECHNICAL QUESTION 2: WHAT IS THE SIGNIFICANCE OF THE CULTURAL RESOURCE?

TECHNICAL APPROACH

- **EVALUATE RESOURCES AGAINST CFR CRITERIA OF ELIGIBILITY**
- **DETERMINE CULTURAL VALUE TO EXISTING SOCIETIES**
- **DEVELOP RESEARCH DESIGN TO CODIFY SCIENTIFIC VALUES**

TECHNICAL QUESTION 2 (CONTINUED)

STATUS AND ACCOMPLISHMENTS

- **PROGRAMMATIC AGREEMENT FINALIZED 12/88**
- **AREA DETERMINED TO BE POTENTIALLY ELIGIBLE FOR NOMINATION TO NATIONAL REGISTER AS AN ARCHAEOLOGICAL DISTRICT**
- **RESEARCH DESIGN FOR YUCCA MOUNTAIN**
 - **SUBMITTED TO ADVISORY COUNCIL ON HISTORIC PRESERVATION IN 1989**
 - **ACHP COMMENTS CURRENTLY UNDER REVIEW FOR RESOLUTION**

TECHNICAL QUESTION 3: WHAT ARE THE POTENTIAL EFFECTS TO THE CULTURAL RESOURCE RESULTING FROM SITE CHARACTERIZATION ACTIVITIES?

TECHNICAL APPROACH

- **POTENTIAL EFFECTS ARE EVALUATED AT TIME OF RESOURCE IDENTIFICATION**
- **MONITOR CONDITION OF RESOURCES ON REGULAR BASIS**

TECHNICAL QUESTION 3 (CONTINUED)

STATUS AND ACCOMPLISHMENTS

- **POTENTIAL EFFECTS HAVE BEEN IDENTIFIED AND EVALUATED FOR KNOWN CULTURAL PROPERTIES**
- **THESE EFFECTS HAVE BEEN IDENTIFIED AS A RESULT OF DESCRIPTIONS OF ACTIVITIES IN SCP**
- **DATABASE ON EXISTING CONDITIONS OF KNOWN PROPERTIES IS BEING ESTABLISHED**
- **REVISIT CULTURAL PROPERTIES ON REGULAR BASIS**
- **SHOULD CONDITIONS AT SITE DETERIORATE, AFFECTED SITES WILL BE CONSIDERED AS CANDIDATES FOR DATA RECOVERY**

TECHNICAL QUESTION 4: HOW WILL POTENTIAL EFFECTS OF SITE CHARACTERIZATION ACTIVITIES TO THE CULTURAL RESOURCE BE MITIGATED?

TECHNICAL APPROACH

- **MITIGATION THROUGH AVOIDANCE ACCOMPLISHED THROUGH MODIFICATION OF ACTIVITY PLANS**
- **IMPLEMENTATION OF DATA RECOVERY AS DESCRIBED IN LONG-RANGE STUDY PLAN COMPONENT OF RESEARCH DESIGN**
- **DEVELOPMENT AND IMPLEMENTATION OF A WORKER EDUCATION PROGRAM**

TECHNICAL QUESTION 4 (CONTINUED)

STATUS AND ACCOMPLISHMENTS

- **CURRENTLY, SITE CHARACTERIZATION ACTIVITIES ARE MODIFIED TO AVOID ADVERSE EFFECTS OR ARE DELAYED UNTIL ARCHAEOLOGICAL DATA RECOVERY HAS BEEN CONDUCTED**
- **LONG-RANGE STUDY PLAN PORTION OF RESEARCH DESIGN EXPECTED TO BE APPROVED AND IMPLEMENTED BY 6/90**
- **DATA RECOVERY WILL BE IMPLEMENTED AT A DESIGNATED SAMPLE OF CULTURAL PROPERTIES IN ORDER TO MITIGATE POTENTIALLY ADVERSE EFFECTS OF SITE CHARACTERIZATION**

TECHNICAL QUESTION 4 (CONTINUED)

- **CURRENTLY DEVELOPING MAJOR RESEARCH STUDIES:**

- OBSIDIAN HYDRATION**
 - RAW MATERIAL SOURCE CHARACTERIZATION**
 - GEOARCHAEOLOGICAL MAPPING**
 - DEVELOPMENT OF GIS DATABASE**
 - PALEOENVIRONMENTAL DATA**

- **WORKER EDUCATION PROGRAM VIDEO COMPLETED: OTHER TRAINING MATERIALS AND PROGRAMS PLANNED**

INTERDISCIPLINARY INTERFACES

WHAT WE PROVIDE OTHER PROGRAMS

- **PREACTIVITY AND PROJECT AREA SURVEYS: IDENTIFICATION OF CULTURAL RESOURCES AND POTENTIAL ADVERSE IMPACTS AS RESULT OF SCP ACTIVITIES**
- **PROVIDE RECOMMENDATIONS FOR ACTIVITY MODIFICATIONS**
- **DATA ON PALEOENVIRONMENTS AND GEOCHRONOLOGY OF YUCCA MOUNTAIN REGION**
- **EXPERTISE IN PREHISTORIC LIFEWAYS FOR USE IN CONSULTATIONS WITH CONCERNED NATIVE AMERICAN GROUPS, INTERPRETIVE DISPLAYS, PUBLIC PRESENTATIONS, ETC.**
- **LOCATION OF TEMPORARY WATER SOURCES FOR RADIOLOGICAL MONITORING**

INTERDISCIPLINARY INTERFACES

WHAT WE USE OR NEED FROM OTHER PROGRAMS

- **ENVIRONMENTAL INFORMATION (GEOLOGICAL, BIOLOGICAL, HYDROLOGICAL, METEOROLOGICAL)**
- **SCP STUDY PLANS, TO ASSESS POTENTIAL IMPACTS TO CULTURAL RESOURCES**
- **MAPPING, DIGITAL ELEVATION MODEL, AND AERIAL PHOTOGRAPHY**
- **LOGISTIC SUPPORT AND SUPPORT FOR COORDINATION WITH OTHER AGENCIES**