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
QUATERNARY SCIENCE CENTER
DESERT RESEARCH INSTITUTE

PRESENTER'S TELEPHONE NUMBER: (702) 673-7306

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 PREAMPTIVITY 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 FORTYMILE CANYON SURVEY AREAS COMPLETED IN 1988

- PLANNED SAMPLE SURVEYS IN LOWER FORTYMILE WASH, SOUTHWEST YUCCA MOUNTAIN AREAS TO BE CONDUCTED DURING NEXT SIX MONTHS

- ADDITIONAL PREAMPTIVITY 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