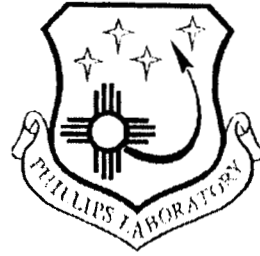
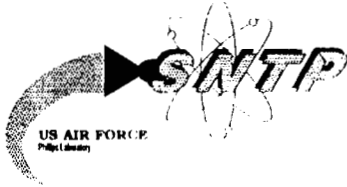


N93-26939

SPACE NUCLEAR THERMAL PROPULSION



SNTP ENVIRONMENTAL, SAFETY, AND HEALTH

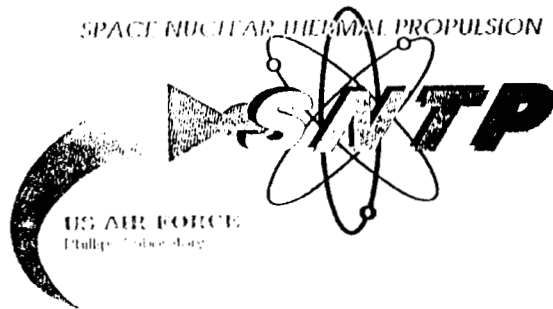
NASA-LEWIS NP-TIM-92

Presenter

Charles D. Harmon

21 October 1992

SPACE NUCLEAR THERMAL PROPULSION



SAFETY POLICY
Implementation Plan and Goals

PHILLIPS LABORATORY
3840 UNIVERSITY AVENUE
MARIETTA, GEORGIA 30066
404/875-6000



PROGRAM SAFETY POLICY

- o **POLICY DOCUMENT PUBLISHED IN MAY 1992**

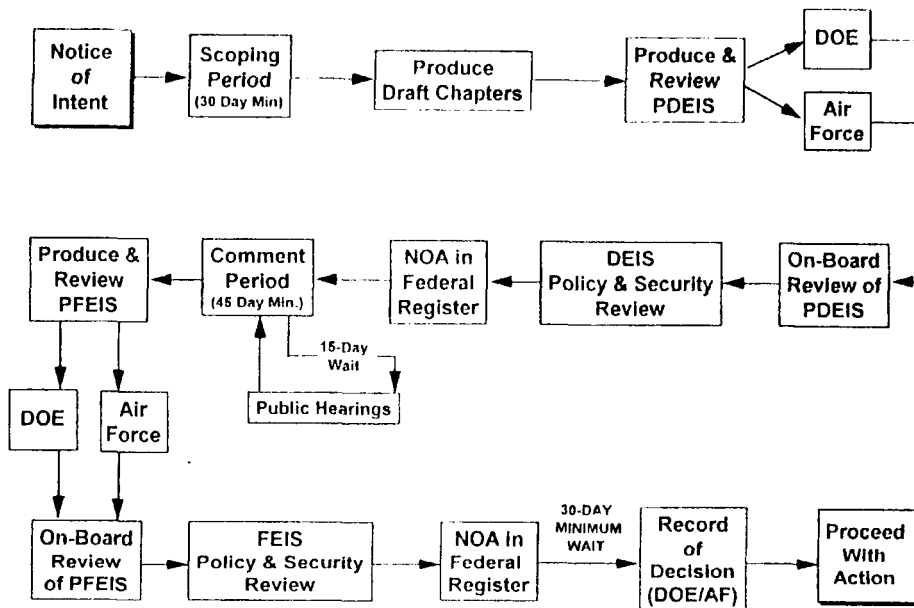
- o **OVERALL OBJECTIVES:**
 - **TO ENSURE THE MAXIMUM PROTECTION OF THE HEALTH AND SAFETY OF THE PUBLIC AND SNTP WORKERS**
 - **TO PROTECT PROPERTY FROM DAMAGE OR LOSS**
 - **TO PROTECT THE ENVIRONMENT FROM CONTAMINATION OR DAMAGE AS A CONSEQUENCE OF SNTP ACTIVITIES**

PROGRAM SAFETY POLICIES

- o **SAFETY AND ENVIRONMENTAL PROTECTION WILL BE EXPLICITLY CONSIDERED AND INCORPORATED THROUGHOUT THE LIFETIME OF EVERY SNTP PROGRAM ACTIVITY.**
- o **THE SNTP PROGRAM SHALL MEET ALL MANDATED, STATUTORY, AND LEGAL REQUIREMENTS FOR SAETY AND ENVIRONMENTAL PROTECTION.**
- o **ADDITIONALLY, EVERY PRACTICAL EFFORT SHALL BE MADE TO MAINTAIN RISKS DUE TO RADIATION AND TOXIC MATERIAL EXPOSURES AS LOW AS REASONABLY ACHIEVABLE (ALARA)**
- o **COMPLIANCE WITH THESE REQUIREMENTS WILL BE BASED ON THE PRINCIPLES OF DEFENSE-IN-DEPTH INVOLVING MULTIPLE PHYSICAL, PROCEDURAL, AND ADMINISTRATIVE BARRIERS.**

Space Nuclear Thermal Propulsion

EIS Process



DEIS PUBLIC HEARING COMMENTS

- o NEPA PROCESS:
 - INSUFFICIENT REVIEW PERIOD
 - SCOPING COMMENTS NOT INCLUDED
 - POSTPONE PENDING RELATED NEPA ACTIVITIES
 - REQUESTED ADDITIONAL PUBLIC HEARINGS
 - INAPPROPRIATE SCOPE
 - INSTALLATIONS NOT EQUALLY REPRESENTED
 - INSUFFICIENT STATEMENTS OF PURPOSE AND NEED
- o PROVIDES OPTIONS FOR TESTING ALTERNATIVE FUELS
- o REQUESTED CLARIFICATION RELATIVE TO INDEMNIFICATION

DEIS PUBLIC HEARING COMMENTS (cont'd)

- o QUESTIONED RELATIONSHIP TO PREVIOUS CLASSIFIED DOCUMENTS
- o IMPACTS ON YUCCA MOUNTAIN NOT ANALYZED
- o POTENTIAL IMPACTS ON EMPLOYMENT NOT ANALYZED
- o ALTERNATIVES:
 - PERSONNEL REQUIREMENTS UNDERESTIMATED
 - ALL SUITABLE SITES HAVE NOT BEEN INCLUDED
 - TRANSPORTATION ISSUES INADEQUATELY ADDRESSED
 - METEOROLOGICAL PREREQUISITES NOT SPECIFIC
 - NON-NUCLEAR ALTERNATIVES NOT CONSIDERED

DEIS PUBLIC HEARING COMMENTS (cont'd)

- o HAZARDOUS MATERIALS:
 - HIGH LEVEL WASTE STREAM NOT IDENTIFIED
 - TRU WASTE CERTIFICATION MISREPRESENTED
 - WASTE REDUCTION TECHNIQUES NOT ADDRESSED
 - WIPP CAPABILITIES OVER ESTIMATED
 - SOME DISPOSAL METHODS ARE ILLEGAL
 - LIQUID WASTE STREAMS NOT ANALYZED
 - RCRA-LISTED WASTE NOT SPECIFIED
 - LIMITS OF INEL RCRA-B EXCEEDED
 - LDR WASTES NOT IDENTIFIED
- o POTENTIAL GREENHOUSE EFFECT NOT ANALYZED

DEIS PUBLIC HEARING COMMENTS (cont'd)

- o PROPOSAL INSENSITIVE TO DESERT ECOLOGY
- o NATIVE AMERICAN ISSUES NOT ADDRESSED
- o GEOLOGY AND SOILS:
 - SEISMIC ACTIVITIES UNDERESTIMATED
 - VOLCANIC ACTIVITIES UNDERESTIMATED
 - FLOODING POTENTIAL UNDERESTIMATED
- o WATER RESOURCES:
 - POTENTIAL DROUGHT EFFECTS NOT ANALYZED
 - GROUNDWATER UNCERTAINTIES NOT IDENTIFIED

DEIS PUBLIC HEARING COMMENTS (cont'd)

- o HEALTH AND SAFETY
 - ALARA PRINCIPLE NOT SUFFICIENTLY EXPLAINED
 - HEAT RELATED SAFETY ISSUES NOT IDENTIFIED
 - ACCIDENT ANALYSES NOT BOUNDING
 - INSUFFICIENT DESIGN DETAIL - CONTAINMENT & CONTROL
 - INSUFFICIENT DESIGN DETAIL - ETS
 - CONTROL ROOM HABITABILITY NOT DEFINED
 - INAPPROPRIATE CORRELATIONS TO CHEST X-RAYS
 - FALLOUT CONSEQUENCES TO FLORA/FAUNA NOT DISCUSSED

DEIS PUBLIC HEARING COMMENTS (cont'd)

- o **HEALTH AND SAFETY (cont'd)**
 - **HYDROGEN SAFETY ISSUES NOT ADEQUATELY ADDRESSED**
 - **HYDROGEN EMBRITTLEMENT ISSUES NOT CONSIDERED**
 - **CONSEQUENCES TO SOUTHERN UTAH NOT SPECIFIED**
 - **METHODS TO CALCULATE EXPOSURE NOT EXPLAINED**
 - **QUANTITY OF REACTOR CORES ON-SITE NOT SPECIFIED**
 - **REQUESTED A DISCUSSION OF MILK MONITORING PROGRAMS**
 - **CLARIFY HAZARDS OF LONG TERM LOW-LEVEL EXPOSURES**

DEIS PUBLIC HEARING COMMENTS (cont'd)

- o **HEALTH AND SAFETY (cont'd):**
 - **NO-THRESHOLD-LEVEL CONCEPT NOT APPLIED**
 - **INVERSION LAYER EFFECTS ON Be RELEASES NOT DISCUSSED**
 - **BACKGROUND DOSES ARE TOO HIGH**
 - **LACK OF RAIL SYSTEMS NOT IDENTIFIED**
 - **PROGRAM BENEFITS NOT COMPARED TO RISKS**
 - **EFFECTS FROM HIGH VOLTAGE LINES NOT DISCUSSED**
 - **DOE SAR PROCESS INADEQUATE**
 - **20% NESHAP REPRESENTS SIGNIFICANT INCREASES**

DEIS PUBLIC HEARING COMMENTS (cont'd)

o HEALTH AND SAFETY (cont'd)

- 170 mRem LIMIT NOT EXPLAINED
- CHARTS DO NOT SUPPORT DECREASING DOSE CLAIMS
- 1980 CENSUS DATA USED FOR INEL

SPACE NUCLEAR THERMAL PROPULSION PROGRAM EIS SCHEDULE												
Update - 10/15/92												
Name	March	April	May	June	July	August	September	October	November	December		
Notice of Intent												
Scoping (minimum of 30 days)												
Info Scoping Plan to AF/CEVP & DOE/NE												
Start (Pre DOE Review Output)												
Input DET Comments To Control System												
Identification Of Substantive Issues												
Perform SNL Analyses and Investigation												
Designate DOE Reviewers		█										
Designate SNL Reviewers		█										
Scoping Meeting - Las Vegas (LV High School)												
Scoping Meeting - Idaho Falls (IF High School)												
Review Existing Documents												

**SPACE NUCLEAR THERMAL PROPULSION PROGRAM
EIS SCHEDULE**

Update - 10/15/92

Name	March	April	May	June	July	August	September	October	November	December
Scoping Meeting - St. George (Holiday Inn)										
Scoping Meeting - Salt Lake (Red Lion Inn)										
Development Of EIS Update/Comment Res Doc										
Chapter 1										
Draft PDEIS Chapters as Produced										
Receive SAR Process Information From Sandia										
Scoping Summary & Meeting (San Bernardino)										
Chapter 2										
Chapter 3										
Chapter 4										
Draft EIS										
Receive NTS Bio/Cultural Surveys From DOE (DRI)										

Critical  Noncritical  SNL Activities 

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**SPACE NUCLEAR THERMAL PROPULSION PROGRAM
EIS SCHEDULE**

Update 10/15/92

Name	March	April	May	June	July	August	September	October	November	December
Receive Analysis From SNL										
Safety Analysis Review (San Bernardino)										
Perform DOE Review										
Perform SNL Review										
Resolve Open Issues										
Internal Distribution of PDEIS (TETC mail date)										
Receive Comments (Unless Attending)										
On-Board Review of PDEIS (San Bernardino)										
Policy and Security Review of PDEIS										
DOE Authorized Release for Public Review										
SAF/MIQ Signature of Filing Letters										
Congressional Drop (SAF/LLP)										

Critical  Noncritical  SNL Activities 

**SPACE NUCLEAR THERMAL PROPULSION PROGRAM
EIS SCHEDULE**

Update - 10/15/92

Name	March	April	May	June	July	August	September	October	November	December
Distribute to Libraries, Interested Parties										
AF/CEVP Files DEIS with EPA										
Notice of Availability in Federal Register										
Public Comment Period (45 day minimum)										
Info Hearing Plan to AF/CEVP										
CEQ Mandated 15 day pre-hearing waiting per.										
Public Hearing - Las Vegas										
Public Hearing - St. George										
Public Hearing - Salt Lake City										
Public Hearing - Idaho Falls										
Comment / Response Workshop (San Bern.)										
Internal Distribution of PFEIS										

Critical  Noncritical  SM Activities 

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**SPACE NUCLEAR THERMAL PROPULSION PROGRAM
EIS SCHEDULE**

Update - 10/15/92

Name	March	April	May	June	July	August	September	October	November	December
On-Board Review of PFEIS (San Bernardino)										
Policy and Security Review of FEIS										
DOE Authorized Release for Public Review										
SAF/MIQ Signature of Filing Letters										
Congressional Drop (SAF/LLP)										
Distribute to Libraries, Interested Parties										
AF/CEVP Files DEIS with EPA										
Notice of Availability in Federal Register										
CEQ 30 Day Waiting Period										
Record of Decision										

Critical  Noncritical  SM Activities 