

Department of Energy

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Richland, Washington 99352

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Dr. Robert J. Wright
Repository Projects Branch
Division of Waste Management
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

WM Record File

101.2

WM Project 10

Docket No.

PDR

LPDR

Dear Dr. Wright:

NRC LICENSING BRIEFING OF NOVEMBER 7, 1984

Distribution:

Wright

Kennedy

(Return to WM, 623-SS)

Bilhorn

REB MJB

DEM cover Hr only

Thank you very much for coordinating the very worthwhile licensing briefing at Richland, WA on November 7, 1984, for the Basalt Waste Isolation Project Office and contractor personnel.

The valued and important points made during the presentations by the following people are invited to your attention.

Robert E. Browning, Director
Division of Waste Management (NMSS)

William Olmstead, Director
Regulations Division (ELD)

Ted Ankrum, Chief
Quality Assurance Branch
Quality Assurance, Safeguards, and Inspection Programs (IE)

Susan Bilhorn
Quality Assurance (NMSS)

Again, your personal attention to the myriad details involved in such a successful meeting is very much appreciated.

As promised, enclosed is the list of attendees and copies of overviews used by NRC personnel.

Very truly yours,

8412060657 841114
PDR WASTE
WM-10

PDR

BWI:AJB

Enclosure

cc: R. F. Cook, NRC-OR
David W. Stevens, SOW
Roger Jim, YIN
E. J. Patawa, CTUIR
A. Pinkham, NPT
James B. Hovis

D. J. Aquino
for O. L. Olson, Project Manager
Basalt Waste Isolation Project Office

1052

DOE/NRC Meeting
Richland, Wash
November 7, 1984

<u>Name</u>	<u>Organization</u>
RON GERTON	DOE
JOHN GRAHAM	ROCKWELL BWIP - Mgr. Licensing
GAIL HUNT	" " Site Dept
ROBERT S. WEGENB	" " LICENSING DEPT
Janet S. Davis	WHC
D. D. Stepniewski	"
J. E. FERGUSON	ROCKWELL - BWIP
R. E. WILLY	" "
RALPH J. GIMERA	" "
R. P. SAGET	DOE - BWIP
SH. CARSON	DOE - RL
Wm. J. Dennison	DOE - HQ/GC
D. H. Dahlem	USDOE BWIPO
J. M. KOVACS	USDOE BWIPO
D. J. Squires	USDOE - BWIPO
J. E. Mecca	USDOE - BWIPO
✓ RE Browning	US NRC - Div. WM
✓ FK Cook	US NRC
S. S. Bickel	US NRC - DWM
✓ W. D. ALTMAN	US NRC - IE
Robert S. Hurler	Rockwell, Chief Genl.
Lee Olson	DOE, BWIP Project Mgr.
Phil Craig	DOE - CSFMPD Director
MILES PATRICK	BATTELLE PNL
ED ASH	ROCKWELL - BWIP
TOMAS W. WOODS	ROCKWELL - BWIP
RM Schwend	Rockwell - BWIP
L. R. Fitch	Rockwell - BWIP
James E. Hovis	XIN
WILLIAM D. WOODS	R. M. PARSONS CO
PAT M. S. DUFFIE	PINL

DOE/NRC Meeting
 Richland, Wash.
 November 7, 1984

<u>Name</u>	<u>Organization</u>
Roy Cole	PNL - MRS Program
Dave Jackson	PNL - MRS Program
Lynn Franklin	PNL - MRS Program
GARY BRACKEN	DOE - RL QUALITY ASSURANCE
MICHAEL KAROL	DOE - RL QUALITY ASSURANCE
JOHN RAST	DOE - RL QA
DOUG SMITH	DOE - RL SAFETY & QA
RON IZATT	DOE - RL - MRS PROGRAM
A. J. BELL	DOE - RL (BWIP) Licensing
J. R. Kirkendall	RHO BWIP Project Control
L. Connell	RHO BWIP Engineering & Construction
G. S. Rokkan	DOE - RL MRS
D. C. Langstaff	DOE - RL CSFM
D. E. Crouter	DOE - RL CSFM
Robert L. Knecht	WHE - Technology
Alden McElrath	RKE/PB
J. L. Ash	EHO BWIP Engr. Design
D. J. Bradley	Battelle, PNL
J. E. Raffen	PNL
D. E. Ryder	PNL - QAO
MAX R. KREITER	BNW, Program Office,
Terry Noland	Rockwell, BWIP QA
B. D. Stonecker	RHO - BWIP QA
ROBERT J. MORRIS	MORRISON KNUDSEN CO. INC.
JAMES L. FABIAN	MORRISON KNUDSEN CO. INC.
STEPHEN L. ALLEN	MORRISON - KNUDSEN CO. INC.
Toy G. Pratt	MORRISON - KNUDSEN CO. INC.
R. D. Kulchok	MORRISON KNUDSEN CO. INC.
R. R. Rommel	MORRISON KNUDSEN CO., INC.
R. L. SHAUB	PNL - WFCPO QA
W. I. Clark	WHE - QA
P. B. Bourne	WHE - QA

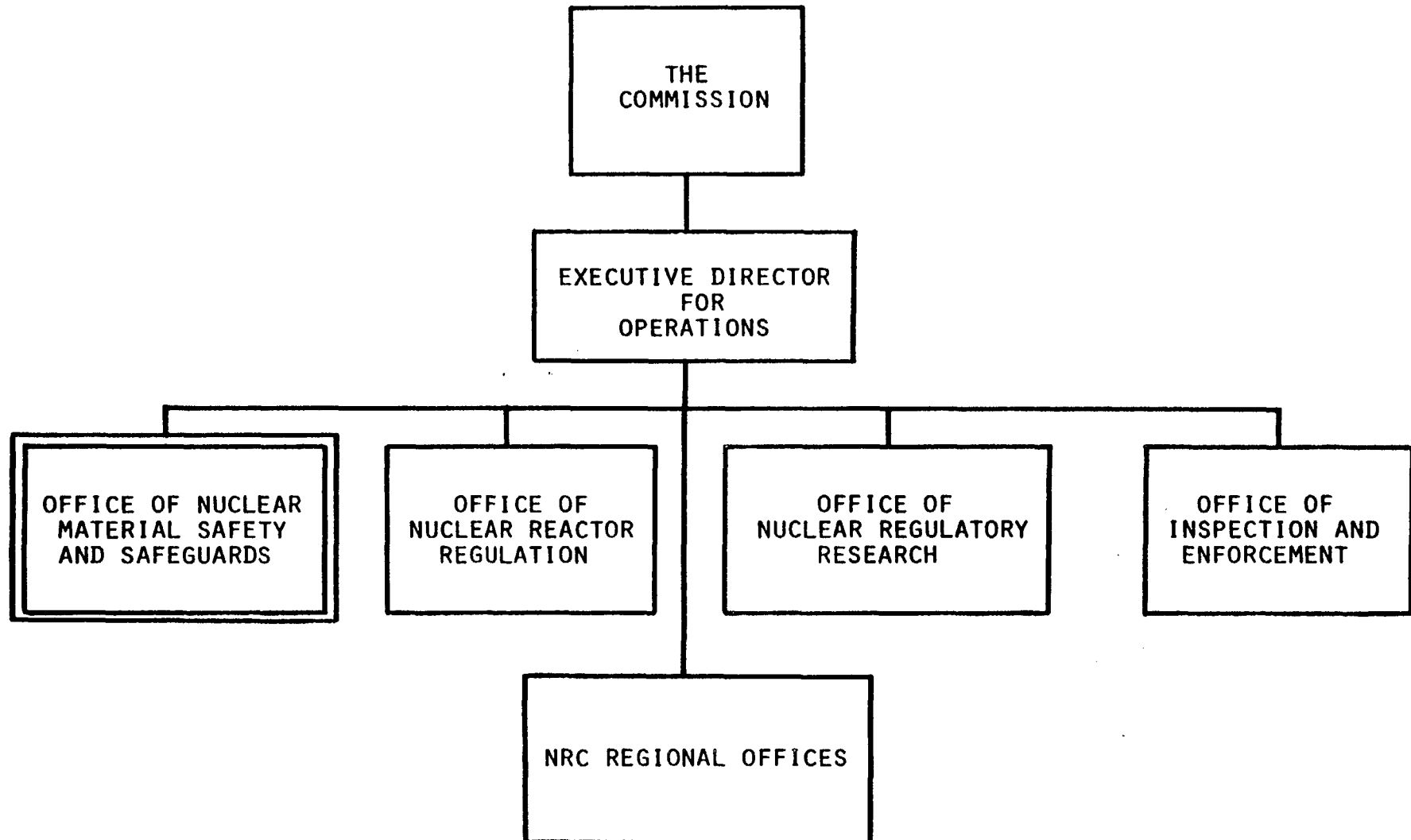
DOE/NRC MEETING 11-7-84
Attendees (continued)

<u>NAME</u>	<u>ORGANIZATION</u>
L. D. Gustafson	WESTINGHOUSE HANFORD
LOUIE L. CALAWAY	DOE/RL PRO
F. A. (TONY) PACE, JR.	DOE-RL PRO
H. H. Aronson	Council of Energy Resource Technicians
Russell Aronson	Halkoma Indian Nation
D. J. Dodds	Rockwell Env Development
W. A. Brewer	State of Wash

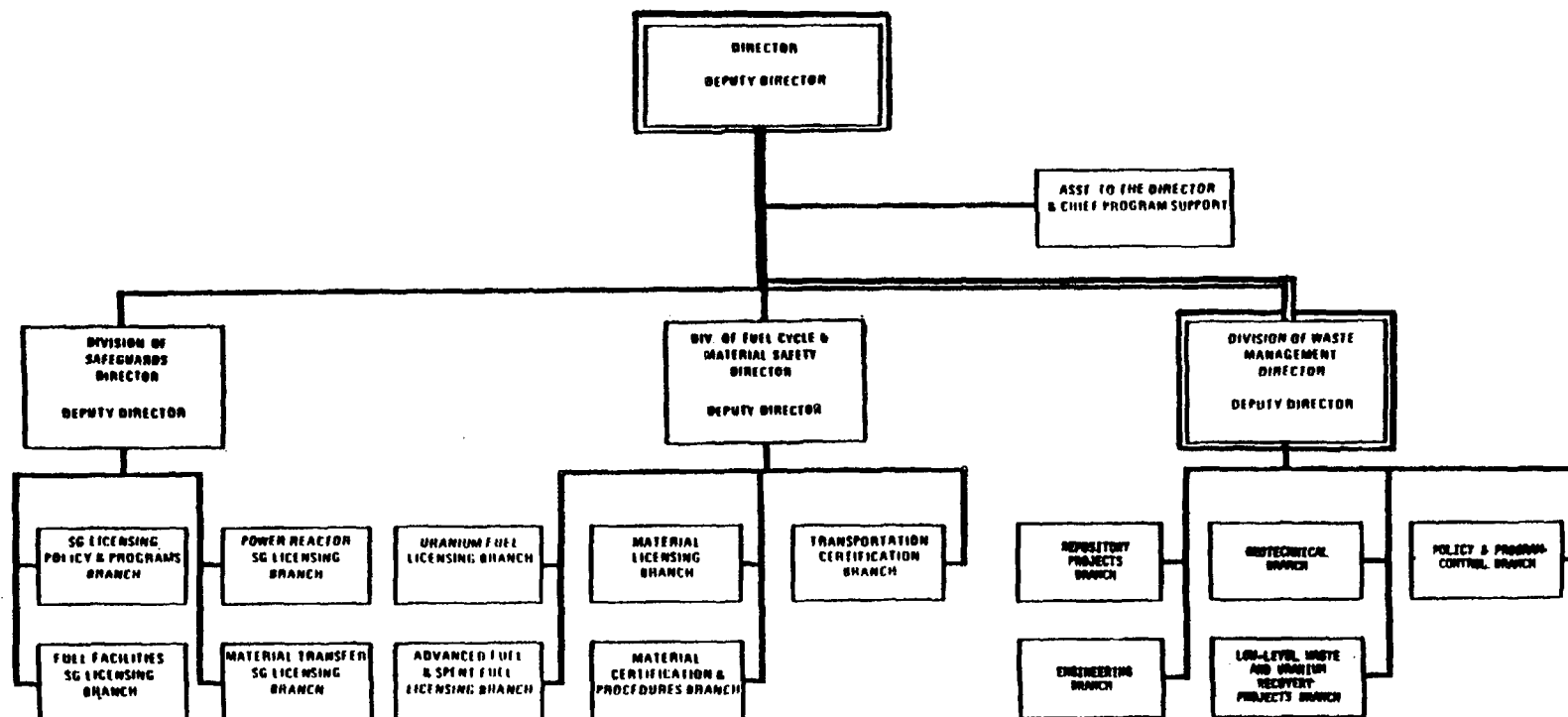
NRC LICENSING
PROCESS

NOVEMBER 1984

NUCLEAR REGULATORY COMMISSION



OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS



LICENSING PROCESS

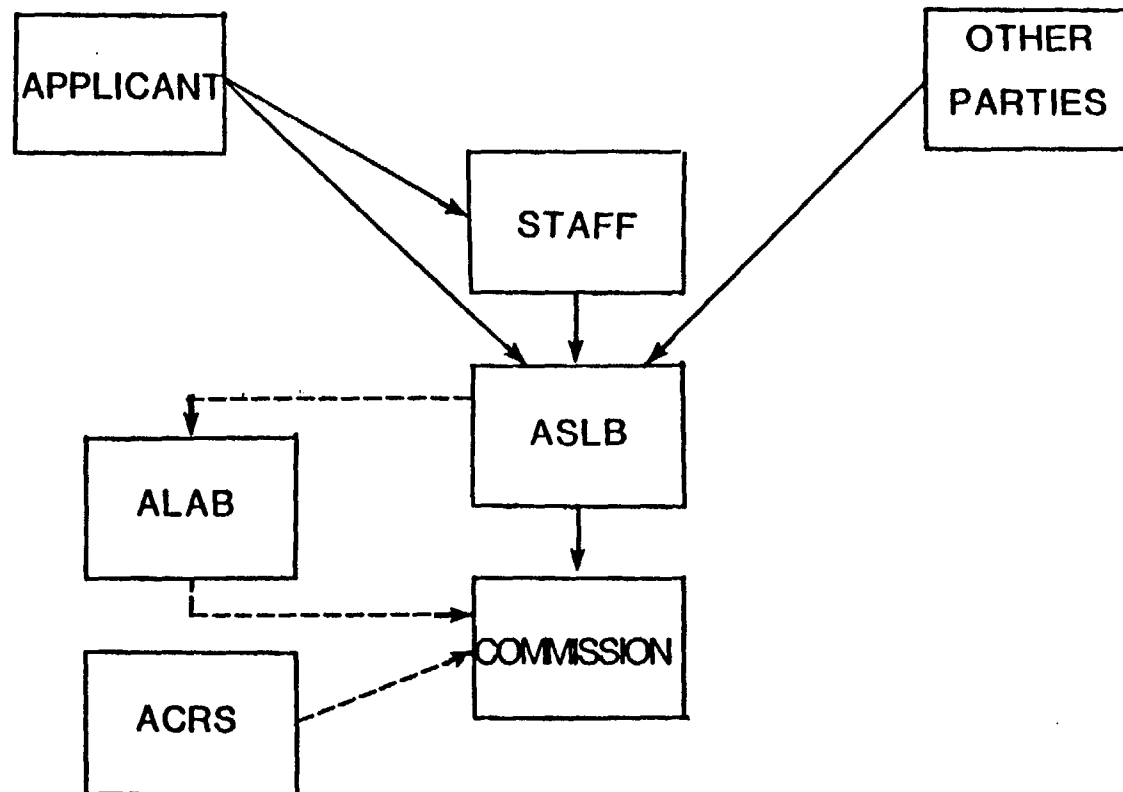
WILLIAM J. OLMSTEAD, DIRECTOR
REGULATIONS DIVISION
OFFICE OF THE EXECUTIVE LEGAL DIRECTOR

LICENSING PROCESS

- REVIEW LICENSING PROCESS
- POTENTIAL PROBLEM AREAS
 - FAILURE TO ADDRESS ISSUES EARLY
 - INADEQUATE FACTS AND DATA PROVIDED
 - CONCEALMENT OF INFORMATION
- CASE HISTORIES
 - FOCUS ON PROBLEM AREAS
 - REVIEW SOME SUCCESS STORIES

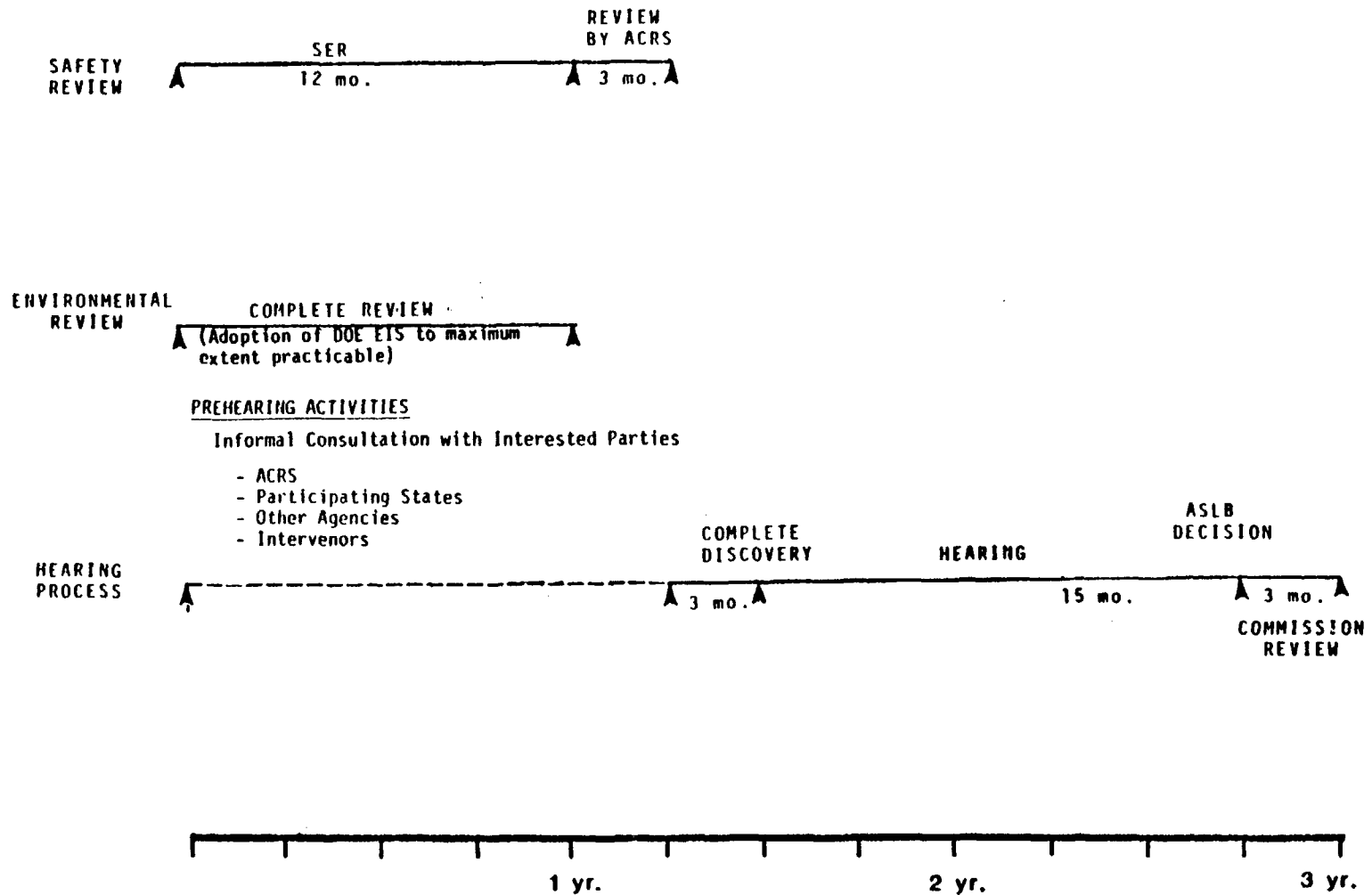
HLW LICENSING DECISIONS

- CONSTRUCTION AUTHORIZATION STAGE
- WASTE EMPLACEMENT STAGE
- SITE CLOSURE STAGE



HLW DECISION PROCESS

SCHEDULE ESTIMATES FOR HLW REPOSITORY



HEARINGS:

LEGAL, ADJUDICATORY PROCESS

- **BURDEN OF PROOF ON APPLICANT**
- **INDEPENDENT ADMINISTRATIVE LAW BOARD**
- **RULES OF EVIDENCE APPLY**
- **MULTIPLE COEQUAL PARTIES**
- **OPPORTUNITY FOR DISCOVERY AND CROSS EXAMINATION**
- **FINDING BY BOARD: "REASONABLE ASSURANCE" THAT 10CFR60 CRITERIA WILL BE MET?**

HEARINGS:

PROCESS REQUIRES

- COMPLETE, TECHNICALLY DEFENSIBLE RATIONALE
- SUPPORTING FACTS AND DATA COLLECTED UNDER
QUALITY ASSURANCE PROGRAM
- CONSIDERATION OF UNCERTAINTIES AND ALTERNATIVE
INTERPRETATIONS
- COMPLETE DOCUMENTATION

QUALITY ASSURANCE
FOR LICENSED NUCLEAR ACTIVITIES

WILLIAM D. ALTMAN, CHIEF
POLICY & PROGRAM DEVELOPMENT
DIVISION OF QUALITY ASSURANCE, SAFEGUARDS, AND INSPECTION PROGRAMS
OFFICE OF INSPECTION AND ENFORCEMENT

NUCLEAR ACTIVITIES

DIFFERENT

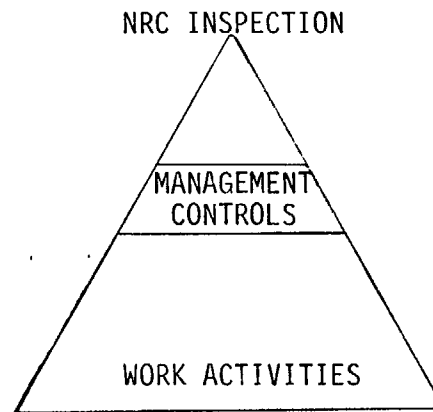
HIGHER STANDARDS

NEED TO DO IT RIGHT

NEED TO BE ABLE TO DEMONSTRATE THAT IT WAS DONE RIGHT

"DOING IT" = SITE CHARACTERIZATION, DESIGN, CONSTRUCTION, OPERATIONS

MANAGEMENT CONTROLS



- ° SMALL PERCENTAGE OF ACTUAL WORK WILL BE WITNESSED OR CONFIRMED BY NRC.
- ° SAMPLING BASIS.
- ° THEREFORE, NRC NEEDS TO PERFORM OVERVIEW OF LICENSEE'S MANAGEMENT CONTROL SYSTEM. IF MANAGEMENT CONTROLS PROGRAM IS WORKING, WORK ACTIVITIES SHOULD BE DONE CORRECTLY.

MANAGEMENT CONTROLS REQUIRED BY NRC REGULATIONS

10 CFR 50 APPENDIX B - REACTORS

10 CFR 60 SUBPART G - HLW REPOSITORIES

	<u>EXAMPLE</u>	<u>PROVIDES FOR</u>
I	ORGANIZATION	INDEPENDENCE DELEGATION ACCESS
II	PROGRAM	WHAT (Q-LIST) COMMENSURATE (GRADED)
III	DESIGN CONTROL	CONTROL OF DESIGN INTERFACES ADEQUACY OF DESIGN
IV	PROCUREMENT CONTROL	PASS QUALITY REQUIREMENTS DOWN TO CONTRACTORS AND VENDORS
V	INSTRUCTIONS, PROCEDURES, AND DRAWINGS	PASS QUALITY REQUIREMENTS DOWN TO CONTRACTORS AND VENDORS WRITTEN PROCEDURES

MANAGEMENT CONTROLS

VI	DOCUMENT CONTROL	CONTROL DOCUMENTS
X	INSPECTION	CONFIRMATION OF QUALITY
XVI	CORRECTIVE ACTION	IDENTIFY AND CORRECT CONDITIONS ADVERSE TO QUALITY FIX CAUSE OF CONDITION TO PREVENT REPETITION
XVII	RECORDS	TO PROVIDE EVIDENCE OF ACTIVITIES AFFECTING QUALITY
XVIII	AUDITS	TO VERIFY COMPLIANCE TO DETERMINE EFFECTIVENESS

MANAGEMENT CONTROL PROGRAM

MANAGEMENT CONTROL PROGRAM REQUIRED BY NRC IS CALLED THE QUALITY ASSURANCE (QA) PROGRAM.

QA IS A TWO EDGED SWORD:

- NEED IT TO PROVIDE PROOF
- QA PROGRAM DEFICIENCIES CAN CAUSE FAILURE OF PROJECT

QA ORGANIZATION DOES NOT ACHIEVE QUALITY - IT ONLY CONFIRMS IT OR ITS ABSENCE. QA ONLY MONITORS.

ACHIEVEMENT OF QUALITY IS THE RESPONSIBILITY OF THE DOERS.

A TOTAL QUALITY PROGRAM INCLUDES EVERYONE.

REACTORS VS. HLW REPOSITORIES

DESIGN AND CONSTRUCTION OF REACTORS IS DIFFERENT IN A LOT OF WAYS FROM ACTIVITIES ASSOCIATED WITH CONSTRUCTION OF HLW REPOSITORY.

- ° SITE CHARACTERIZATION
- ° TECHNICAL REQUIREMENTS
- ° MISSION

HOWEVER, THERE ARE SIMILARITIES:

- ° NUCLEAR
- ° HIGHER STANDARD
- ° HEARING PROCESS
- ° QUALITY ACHIEVEMENT
- ° QUALITY ASSURANCE

SIMILARITIES APPLY TO DIFFERENT PHASES OF HLW REPOSITORY DEVELOPMENT:

- ° SITE CHARACTERIZATION
- ° DESIGN
- ° CONSTRUCTION

REACTOR LESSONS APPLICABLE TO HLW REPOSITORY PROJECTS

FORD AMENDMENT STUDY

- ° MANDATED BY CONGRESS
- ° CAUSED BY QUALITY ACHIEVEMENT OR QUALITY ASSURANCE PROBLEMS AT SEVERAL PROJECTS
 - MARBLE HILL (CONCRETE)
 - SOUTH TEXAS (DESIGN COMPLETION)
 - DIABLO CANYON (DESIGN CONTROL)
 - MIDLAND (SOILS)
 - ZIMMER (RECORDS)
- ° FOCUS OF STUDY WAS ROOT CAUSES
- ° ROOT CAUSES
 - NOT UNIQUE TO NUCLEAR DESIGN AND CONSTRUCTION
 - APPLY TO ANY LENGTHY, COMPLEX PROJECT INVOLVING MANY PEOPLE
 - DEAL MORE WITH MANAGEMENT THAN QA
- ° REPORT TO CONGRESS IN APRIL 1984
- ° WIDE COVERAGE IN PRESS
- ° BASIS OF CHANGES FOR THE FUTURE

FORD AMENDMENT STUDY

"NUCLEAR CONSTRUCTION PROJECTS HAVING SIGNIFICANT QUALITY-RELATED PROBLEMS IN THEIR DESIGN OR CONSTRUCTION WERE CHARACTERIZED BY THE INABILITY OR FAILURE OF UTILITY MANAGEMENT TO EFFECTIVELY IMPLEMENT A MANAGEMENT SYSTEM THAT ENSURED ADEQUATE CONTROL OVER ALL ASPECTS OF THE PROJECT."

- ° INEXPERIENCE
- ° INADEQUATE MANAGEMENT CONTROL
- ° CHANGING ENVIRONMENT
- ° NRC SCREENING PRACTICES

FORD AMENDMENT STUDY

ROOT CAUSES OF PROBLEMS

° INEXPERIENCE

- LACK OF UNDERSTANDING OF PROJECT, OF REGULATORY REQUIREMENTS
- FAILURE TO TREAT NUCLEAR DIFFERENT FROM PAST PROJECTS
- INADEQUATE STAFFING
- OVER RELIANCE ON CONTRACTORS
- FAILURE TO RECOGNIZE SYMPTOMS
- MANY INTERFACES, COMPLEX FIRST OF A KIND PROJECT
- UNPREPARED FOR ACTIVE INTERVENTION

° MANAGEMENT

- LACK OF INVOLVEMENT
- DIFFUSION OF RESPONSIBILITY, DILUTED ACCOUNTABILITY
- VIEW OF QA AS ANOTHER REGULATORY REQUIREMENT, NOT AS MANAGEMENT TOOL OR AS NECESSARY FOR LICENSING
- "TEA KETTLE" SYNDROME
- FALSE SENSE OF SECURITY
- RELIANCE ON NRC TO DETECT PROBLEMS

FORD AMENDMENT STUDY

ROOT CAUSES OF PROBLEMS

° CHANGING ENVIRONMENT

- CHANGING PUBLIC PERCEPTION OF NUCLEAR POWER
- LONG CONSTRUCTION PERIOD
- CHANGING STATE OF ART
- CHANGING DESIGN REQUIREMENTS
- MORE ACTIVE OPPOSITION: QA AN ISSUE

° NRC

- FAILURE TO ADEQUATELY SCREEN FOR EXPERIENCE, MANAGEMENT CAPABILITY
- ASSUMPTION OF UNIFORM LEVEL OF INDUSTRY COMPETENCE
- FOCUS ON OPERATIONS AT EXPENSE OF DESIGN AND CONSTRUCTION
- CHANGING REQUIREMENTS

FORD AMENDMENT STUDY

LESSONS

- MANAGEMENT INVOLVEMENT, ACCOUNTABILITY
- DESIGN COMPLETION
- CONFIGURATION CONTROL, READINESS REVIEWS
- PROOF OF QUALITY, AUDIT TRAIL
- NRC CANNOT PERFORM LICENSEE'S FUNCTION

GEOLOGIC REPOSITORY--
REGULATORY APPROACH

ROBERT E. BROWNING, DIRECTOR
DIVISION OF WASTE MANAGEMENT
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS

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HLW LICENSING APPROACH

- FEATURES OF 10 CFR 60 INTENDED TO AVOID PAST LICENSING/QA PITFALLS
 - SYSTEM TECHNICAL REQUIREMENTS SET FAR BEFORE FORMAL LICENSING
 - SYSTEMS PERFORMANCE APPROACH VS. HIGHLY PRESCRIPTIVE APPROACH
 - NEEDED FLEXIBILITY PROVIDED
 - NUMERICAL PERFORMANCE OBJECTIVES DEFINE "IMPORTANT TO SAFETY" AND "...TO WASTE ISOLATION"
 - EXTENSIVE PRE-LICENSING CONSULTATION/GUIDANCE PROCESS
 - SCP/SCA PROCESS
 - TECHNICAL INTERACTIONS UNDER PROCEDURAL AGREEMENT
 - STAFF TECHNICAL POSITIONS
 - RULEMAKING TO FORMALLY CLOSE SELECTED ISSUES
 - OPPORTUNITY FOR EARLY VENTILATION AND CONSENSUS BUILDING ON POTENTIAL LICENSING ISSUES
- (

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IMPLEMENTATION--
CURRENT NEEDS

- CONTINUATION OF PRE-LICENSING CONSULTATION AND GUIDANCE PROGRAM
 - DOE ESTABLISH AT LEAST TENTATIVE TECHNICAL GOALS FOR SYSTEM COMPONENTS
 - CONTROL OF DESIGN PROCESS INCLUDING SUPPORTING SITE INVESTIGATIONS
 - DOE PROPOSE AND SUPPORT LIST OF ITEMS "IMPORTANT TO SAFETY" AND "...TO WASTE ISOLATION"
 - QA PRINCIPLES IMPLEMENTED ASAP
 - ISSUE TRACKING AND INFORMATION MANAGEMENT SYSTEMS DEVELOPED ASAP
- (