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

PRESENTATION TO
THE NUCLEAR WASTE TECHNICAL REVIEW BOARD

SUBJECT: QUALITY ASSURANCE GRADING PROCESS

PRESENTER: RAM B. MURTHY

PRESENTER'S TITLE
AND ORGANIZATION: CHAIRMAN, QUALITY REVIEW BOARD
YUCCA MOUNTAIN PROJECT OFFICE

PRESENTER'S
TELEPHONE NUMBER: (702) 794-7968
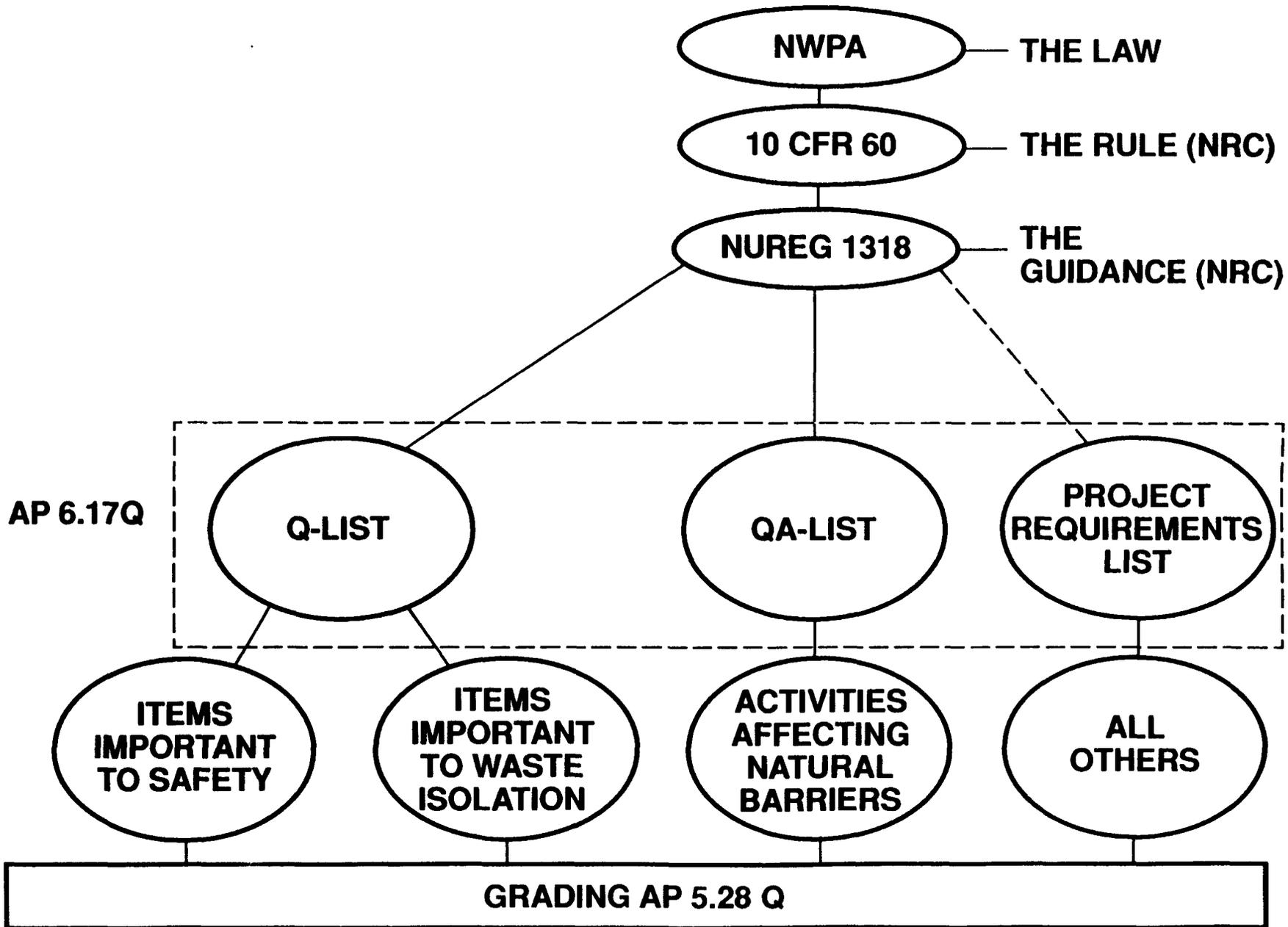

MARCH 26-27, 1991

GRADING

- **WHAT IS IT?**

- **WHY IS IT DONE?**

- **HOW IS IT DONE?**

- **WHO DOES IT?**

GRADING

THE ACT OF DETERMINING THE QA MEASURE (S), BASED ON THE CRITERIA OF THE QUALITY ASSURANCE REQUIREMENTS DOCUMENT (QARD), FOR WHICH APPLICATION IS NECESSARY TO DEVELOP AND MAINTAIN CONFIDENCE IN THE QUALITY OF AN ITEM OR ACTIVITY

GRADING PROCESS

NWPA — THE LAW

10 CFR 60 — THE RULE (NRC)

NUREG 1318 — THE GUIDANCE (NRC)

AP 6.17Q

Q-LIST

QA-LIST

PROJECT REQUIREMENTS LIST

ITEMS IMPORTANT TO SAFETY

ITEMS IMPORTANT TO WASTE ISOLATION

ACTIVITIES AFFECTING NATURAL BARRIERS

ALL OTHERS

GRADING AP 5.28 Q

IMPLEMENTING PROCEDURES

NUREG-1318 GUIDANCE IMPLEMENTED THROUGH ADMINISTRATIVE PROCEDURES

- AP-6.17Q - DETERMINATION OF IMPORTANCE OF ITEMS AND ACTIVITIES
- AP-5.28Q - QUALITY ASSURANCE GRADING

QUALITY LIST (Q-LIST)

PRECLOSURE

- ITEMS IMPORTANT TO SAFETY (IITS)- ENGINEERED ITEMS THAT PREVENT OR MITIGATE A PRECLOSURE ACCIDENT THAT COULD RESULT IN A DOSE OF 0.5 REM

POSTCLOSURE

- ITEMS IMPORTANT TO WASTE ISOLATION (IITWI)- NATURAL AND ENGINEERED BARRIERS THAT ARE RELIED UPON FOR ACHIEVING THE POSTCLOSURE OBJECTIVES OF 10CF60, SUBPART E

QUALITY ACTIVITIES LIST (QAL)

ACTIVITIES CONDUCTED DURING SITE CHARACTERIZATION, CONSTRUCTION, START-UP TESTING, OPERATION, OR CLOSURE THAT RELATE TO NATURAL BARRIERS IMPORTANT TO WASTE ISOLATION. THESE ACTIVITIES MAY INCLUDE:

- SITE CHARACTERIZATION
- PERFORMANCE ASSESSMENTS
- ACTIVITIES THAT MAY AFFECT WASTE ISOLATION CAPABILITY OF A NATURAL BARRIER

MUST BE COVERED BY 10CFR60 SUBPART G QA PROGRAM

PROJECT REQUIREMENTS LIST (PRL)

A TABULATION OF ITEMS AND ACTIVITIES THAT WERE EVALUATED FOR POSSIBLE INCLUSION ON THE Q-LIST OR THE QAL AND DO NOT MEET THE DEFINITION OF THE FOLLOWING:

A)   IMPORTANT TO SAFETY

B)   IMPORTANT TO WASTE ISOLATION

C)   QUALITY ACTIVITIES

PROCEDURE IMPLEMENTING GROUPS

ASSESSMENT TEAM (AT)

- PERFORMS TECHNICAL EVALUATION OF ITEMS AND ACTIVITIES UNDER AP-6.17Q TO RECOMMEND FOR Q-LIST, QAL AND PRL

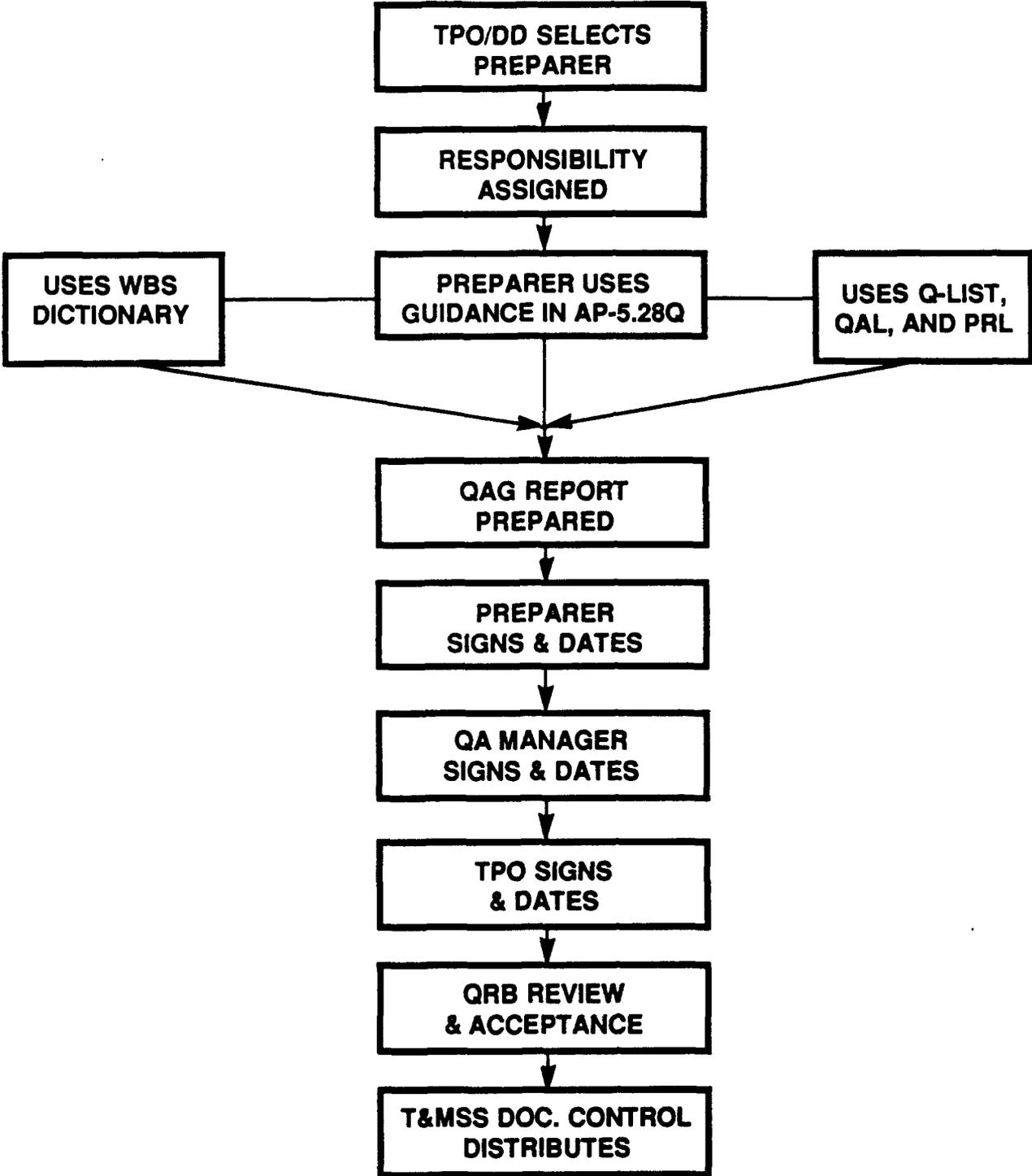## QUALITY REVIEW BOARD (QRB)

- REVIEWS AND ACCEPTS ASSESSMENT TEAM EVALUATIONS, Q-LIST, QAL, AND PRL - AP-6.17Q
- REVIEWS AND ACCEPTS QA GRADING REPORTS PREPARED BY PARTICIPANTS - AP-5.28Q

MAINTENANCE OF LISTS

● **CHANGES TO Q-LIST, QAL AND PRL WILL BE EVALUATED AND MAINTAINED BY THE ASSESSMENT TEAM**

YMP GRADING PROCESS

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                    │   TPO/DD SELECTS      │
                    │      PREPARER         │
                    └──────────┬───────────┘
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                    ┌──────────▼───────────┐
                    │   RESPONSIBILITY      │
                    │      ASSIGNED         │
                    └──────────┬───────────┘
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┌──────────────┐   ┌──────────▼───────────┐   ┌──────────────────┐
│  USES WBS    │───│   PREPARER USES       │───│  USES Q-LIST,    │
│ DICTIONARY   │   │ GUIDANCE IN AP-5.28Q  │   │  QAL, AND PRL    │
└──────────────┘   └──────────┬───────────┘   └──────────────────┘
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                    ┌──────────▼───────────┐
                    │     QAG REPORT        │
                    │      PREPARED         │
                    └──────────┬───────────┘
                               │
                    ┌──────────▼───────────┐
                    │     PREPARER          │
                    │    SIGNS & DATES      │
                    └──────────┬───────────┘
                               │
                    ┌──────────▼───────────┐
                    │    QA MANAGER         │
                    │    SIGNS & DATES      │
                    └──────────┬───────────┘
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                    │     TPO SIGNS         │
                    │      & DATES          │
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                    │     QRB REVIEW        │
                    │    & ACCEPTANCE       │
                    └──────────┬───────────┘
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                    │  T&MSS DOC. CONTROL   │
                    │     DISTRIBUTES       │
                    └──────────────────────┘
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TYPES OF ACTIVITIES BEING GRADED

- ● ALL ACTIVITIES IDENTIFIED ON THE Q-LIST, QAL AND PRL ARE BEING SYSTEMATICALLY GRADED

MAINTENANCE

- ● TO DATE, 353 GRADING REPORTS HAVE BEEN REVIEWED
- ● DOCUMENT CONTROL (T&MSS)

APPLICABILITY

- **ALL YUCCA MOUNTAIN PROJECT PARTICIPANTS**

- **PREREQUISITE TO PERFORMANCE OF WORK RELATED TO AN ITEM OR ACTIVITY LISTED ON THE Q-LIST, QUALITY ACTIVITIES LIST, OR PROJECT REQUIREMENTS LIST**