

QUALITY ASSURANCE

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

**PRESENTATION TO THE
NUCLEAR WASTE TECHNICAL REVIEW BOARD
MARCH 7-8, 1989**

QUALITY ASSURANCE

COMPRISING ALL THOSE PLANNED AND SYSTEMATIC ACTIONS NECESSARY TO PROVIDE ADEQUATE CONFIDENCE THAT A STRUCTURE, SYSTEM OR COMPONENT WILL PERFORM SATISFACTORILY IN SERVICE

WHEN THE PRODUCT IS A REPORT OF A SIGNIFICANT STUDY OR INVESTIGATION, QA ALSO COMPRISES THOSE PLANNED AND SYSTEMATIC ACTIONS NECESSARY TO PROVIDE ADEQUATE CONFIDENCE IN THE VALIDITY AND INTEGRITY OF THE REPORTED DATA, METHODS AND PROCEDURES, AND IN THE PROTECTION, RETRIEVABILITY AND POSSIBLE REPLICABILITY OF THE DATA

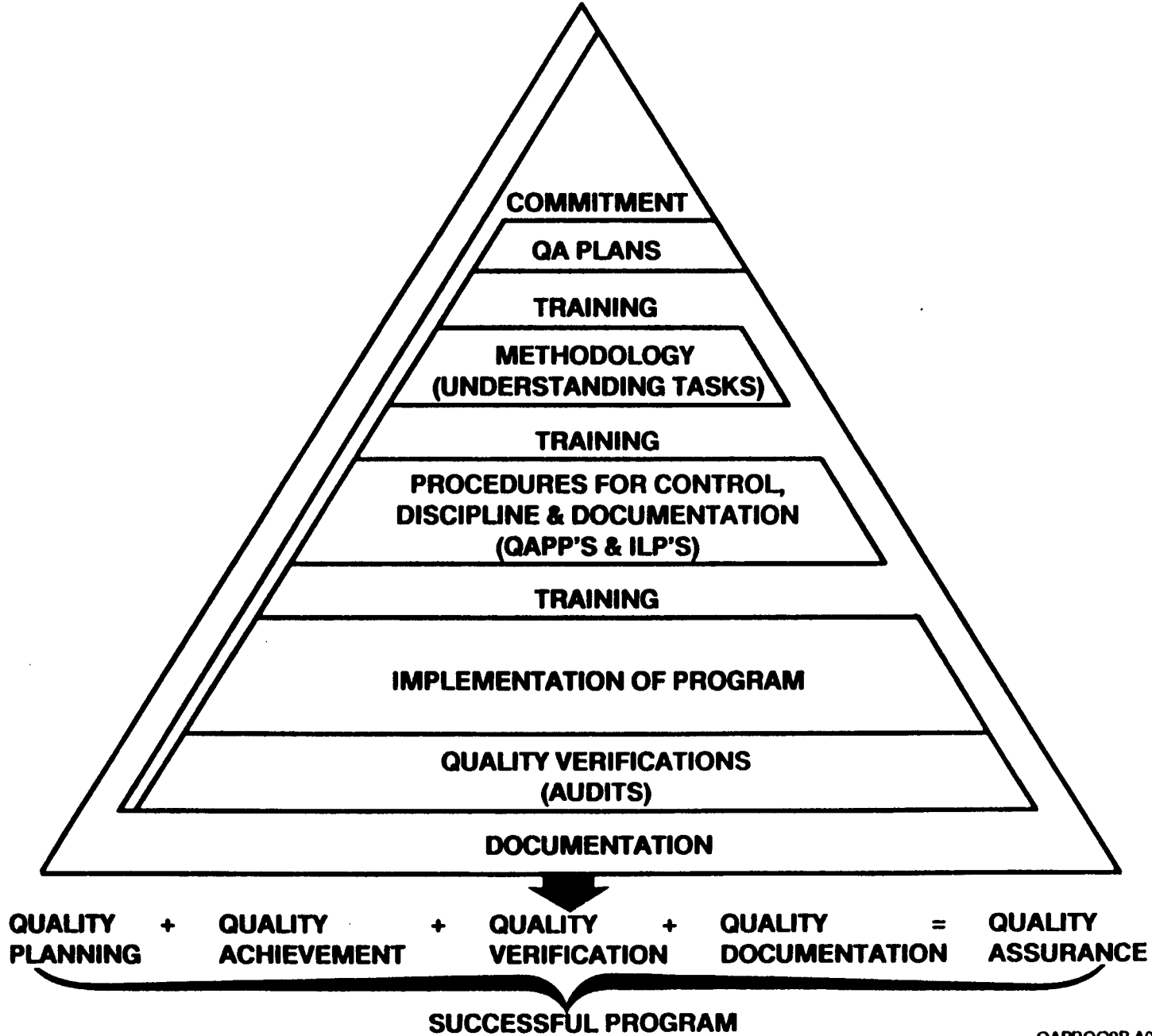
WHY HAVE A QA PROGRAM?

- **COMPLIMENTS GOOD SCIENCE AND ENGINEERING**
- **A KEY FUNCTION OF SOUND PROJECT MANAGEMENT**
- **THE WASTE PROGRAM IS JUST TOO IMPORTANT TO “TRUST” THAT EVERYTHING WILL BE DONE PROPERLY**
- **THIS IS A LONG DURATION, COMPLEX PROGRAM INVOLVING MANY PEOPLE**
- **PROVIDES CONFIDENCE THAT THE ENVIRONMENT AND PUBLIC HEALTH AND SAFETY WILL BE PROTECTED**
- **MANDATORY FOR NUCLEAR REGULATORY COMMISSION LICENSING**
- **PROVIDES A RECORD IN ORDER TO DEFEND AGAINST LEGAL CHALLENGES**

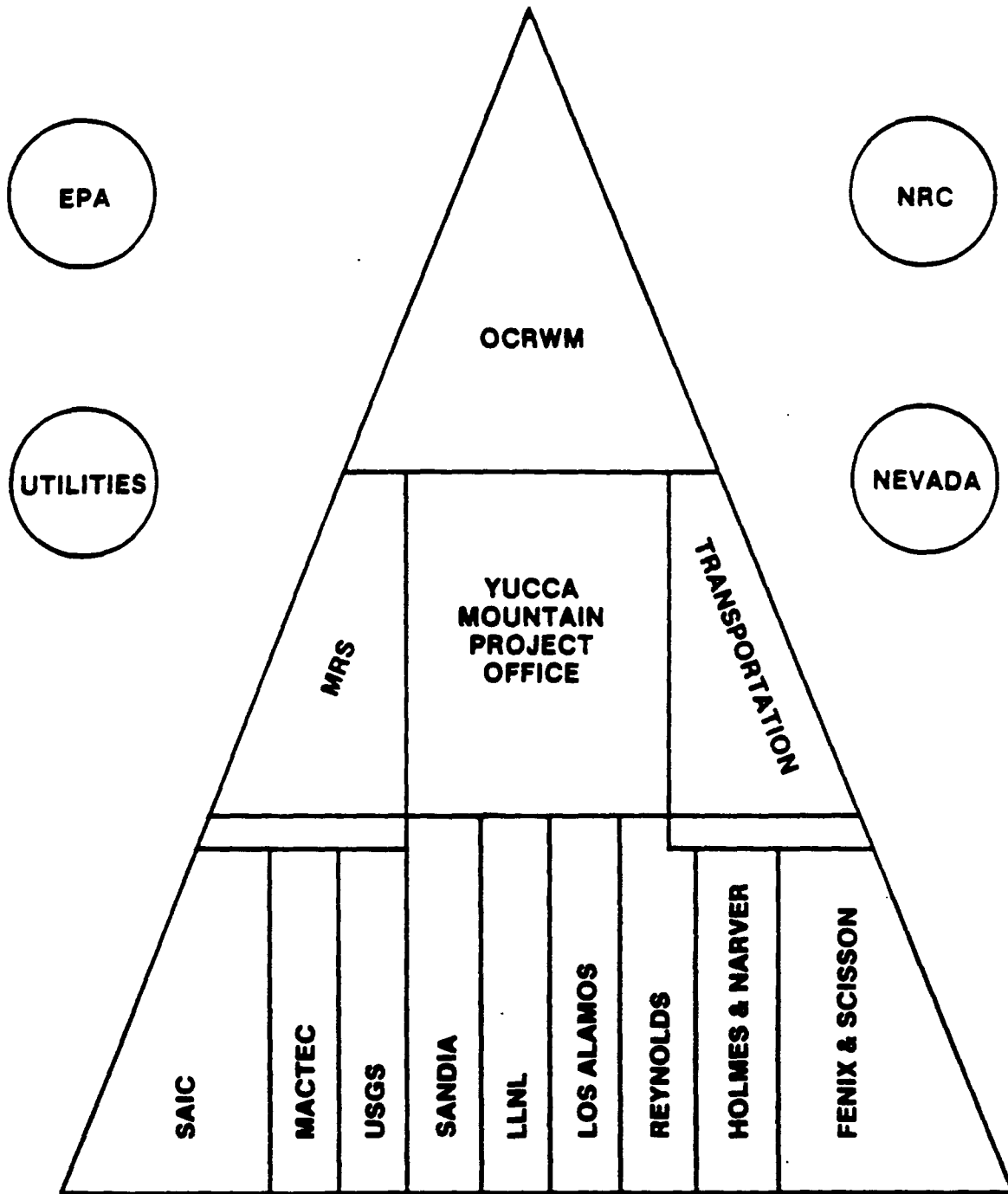
OCRWM COMMITMENT TO DEVELOPING A QA PROGRAM

**AN ACCEPTABLE QA PROGRAM WILL BE
ESTABLISHED PRIOR TO INITIATING ANY
NEW SITE CHARACTERIZATION ACTIVITIES
IN NEVADA**

ELEMENTS OF DEVELOPING A QA PROGRAM



ORGANIZATIONAL STRUCTURE



COORDINATED AND INTEGRATED QA PLANS AT ALL LEVELS

OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT

- **QA REQUIREMENTS DOCUMENT**
- **QA PROGRAM DESCRIPTION**
- **QA ADMINISTRATIVE PROCEDURES**
- **QA LINE ORGANIZATION IMPLEMENTATION PROCEDURES**

YUCCA MOUNTAIN PROJECT OFFICE

- **NNWSI QA PLAN (88-9)**
- **YMPO QA PLAN (88-1)**
- **QA ADMINISTRATIVE PROCEDURES**
- **QA LINE ORGANIZATION IMPLEMENTATION PROCEDURES**

PARTICIPATING ORGANIZATIONS

- **INDIVIDUAL QA PROGRAM PLANS**
- **QA ADMINISTRATIVE PROCEDURES**
- **QA LINE ORGANIZATION IMPLEMENTATION PROCEDURES**

BASIC ELEMENTS FOR ALL QA PLANS

INDUSTRY PRACTICE/STANDARDS

- **ANSI/ASME NQA-1, 1986, “QUALITY ASSURANCE PROGRAM REQUIREMENTS FOR NUCLEAR FACILITIES”**

NUCLEAR REGULATORY COMMISSION

- **APPENDIX B, 10 CFR PART 50, “QUALITY ASSURANCE CRITERIA FOR NUCLEAR POWER PLANTS”**
- **10 CFR PART 60, (SUBPART G) “DISPOSAL OF HIGH LEVEL RADIOACTIVE WASTES IN GEOLOGIC REPOSITORIES QUALITY ASSURANCE”**
- **NRC REVIEW PLAN: QUALITY ASSURANCE PROGRAMS FOR SITE CHARACTERIZATION OF HIGH-LEVEL WASTE REPOSITORIES**

DEPARTMENT OF ENERGY

- **DOE 5700.6B, “QUALITY ASSURANCE DIRECTIVE”**

“18 QA CRITERIA”

- 1. ORGANIZATION**
- 2. QUALITY ASSURANCE PROGRAM**
- 3. SCIENTIFIC AND DESIGN CONTROL**
- 4. PROCUREMENT DOCUMENT CONTROL**
- 5. INSTRUCTION, PROCEDURES AND DRAWINGS**
- 6. DOCUMENT CONTROL**
- 7. CONTROL OF PURCHASED MATERIALS, EQUIPMENT AND SERVICES**
- 8. IDENTIFICATION AND CONTROL OF MATERIALS, PARTS AND COMPONENTS**
- 9. CONTROL OF SPECIAL PROCESSES**
- 10. INSPECTION**
- 11. TEST CONTROL**
- 12. CONTROL OF MEASURING AND TEST EQUIPMENT**
- 13. HANDLING, STORAGE AND SHIPPING**
- 14. INSPECTION, TEST AND OPERATING STATUS**
- 15. CONTROL OF NONCONFORMING MATERIALS, PARTS OR COMPONENTS**
- 16. CORRECTIVE ACTION**
- 17. QUALITY ASSURANCE RECORDS**
- 18. AUDITS**

TRAINING

- **ONGOING THROUGHOUT ALL PHASES AND LEVELS OF THE QA PROGRAM**
- **ESSENTIAL FOR COMMUNICATIONS AND PROGRAM UNDERSTANDING**

PROCEDURES AND INSTRUCTIONS

- **THE DISCIPLINED APPROACH TO THE PLANNING, CONTROL, PERFORMANCE, AND DOCUMENTATION OF ALL WORK TO ASSURE THAT IT IS PERFORMED SATISFACTORILY**
- **WELL WRITTEN PROCEDURES COMPLIMENT GOOD SCIENCE AND ENGINEERING**

PROGRAM IMPLEMENTATION

- **IMPLEMENTATION OF QUALITY IS A LINE FUNCTION AND RESPONSIBILITY AND IS WHERE QUALITY IS ACHIEVED**

- **REQUIRES STRICT ADHERENCE TO PROGRAM PLANS AND PROCEDURES**

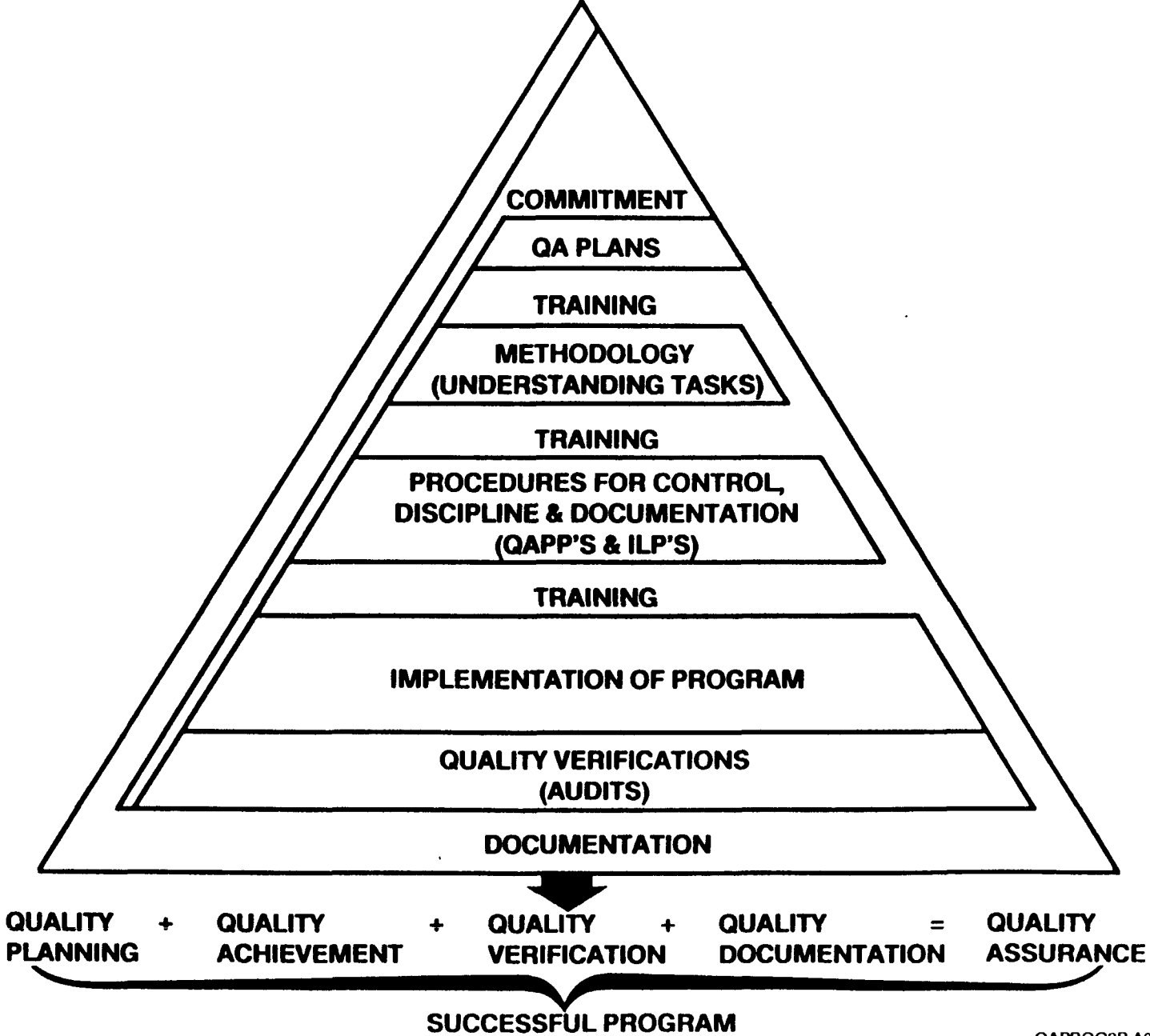
QUALITY VERIFICATION

- **PERFORMED BY LINE ORGANIZATION**
- **VERIFIED BY QA**

DOCUMENTATION

- **NECESSARY TO DEMONSTRATE QUALITY IN BOTH THE PROCESS AND FINAL PRODUCT**
- **VITAL TO SUCCESSFUL LICENSING AND DEFENSE OF LEGAL CHALLENGES**
- **PUBLIC/CONGRESS DEMAND PROOF THAT THE ENVIRONMENT AND PUBLIC HEALTH WILL BE PROTECTED**

ELEMENTS OF DEVELOPING A QA PROGRAM



QUALIFICATION PROCESS

- **QA PLAN ACCEPTANCE BY DOE**
- **VERIFICATION BY LINE AND QA ORGANIZATION TO DEMONSTRATE SATISFACTORY IMPLEMENTATION**
- **QA PROGRAM ACCEPTANCE BY OCRWM AND NRC**
- **QUALIFIED PROGRAM IN PLACE PRIOR TO STARTING NEW SITE CHARACTERIZATION ACTIVITIES**

QA PROGRAM QUALIFICATION

GENERIC SCHEDULE LOGIC

QAPP - QUALITY ASSURANCE PROGRAM PLANS



APQ - QUALITY AFFECTING ADMINISTRATIVE PROCEDURES



QAAP - QUALITY ASSURANCE ADMINISTRATIVE PROCEDURES



IMP - IMPLEMENTING LINE PROCEDURES



TRAINING



ESTABLISH PROGRAM



SURVEILLANCES - PARTICIPANT



*IMPLEMENTATION
& VERIFICATION*

SURVEILLANCES - DOE



RESOLVE OPEN ITEMS



PARTICIPANT MANAGEMENT REVIEW



DOE MANAGEMENT REVIEW



YMPO/NRC AUDIT



RESPONSIBILITY

MGMT

QA

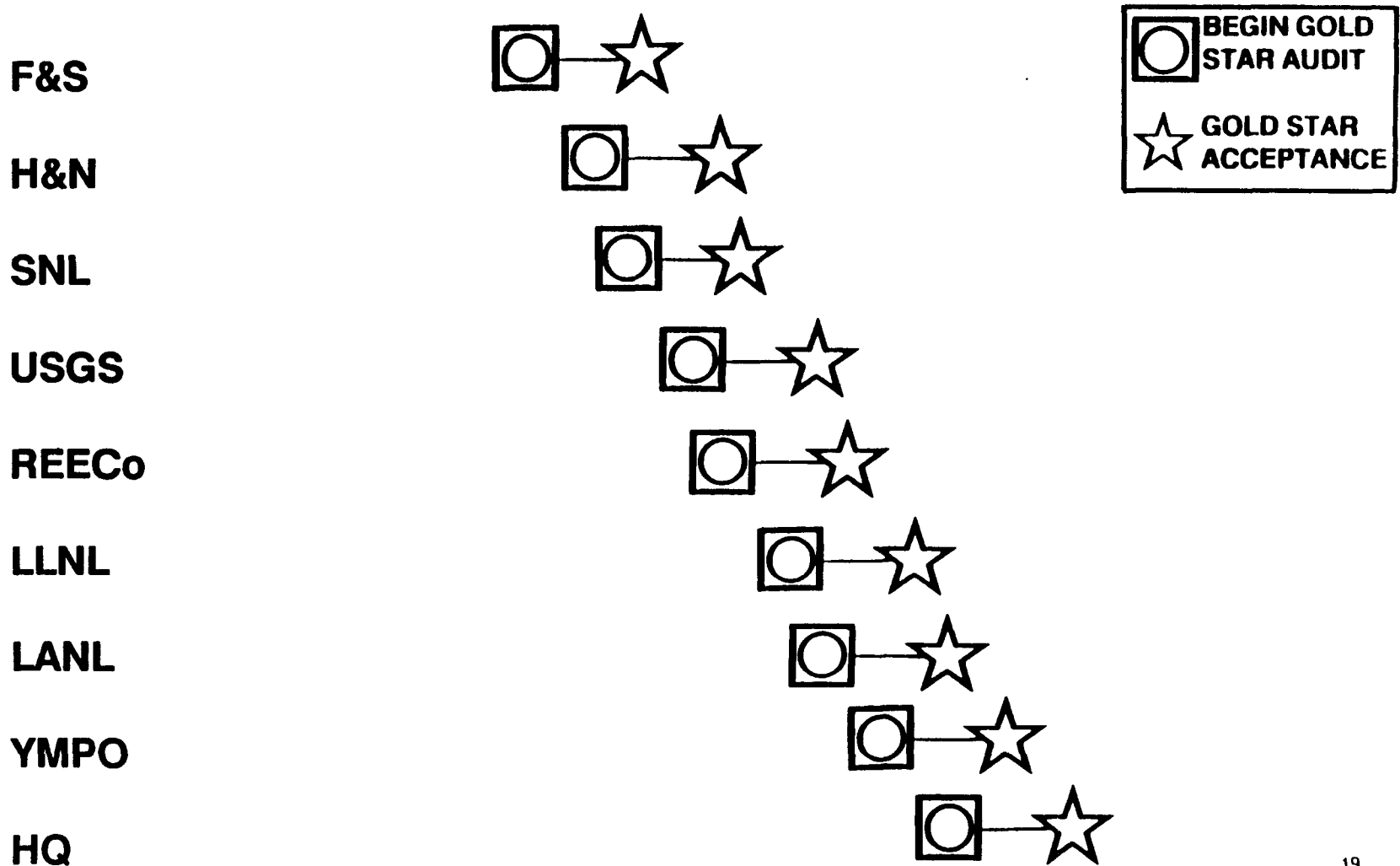
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QA PROGRAM QUALIFICATION

REVISED "GOLD STAR" - PRELIMINARY 31 JAN 89

1989 | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT



ACHIEVING A SUCCESSFUL QUALITY ASSURANCE PROGRAM REQUIRES

- **COMMUNICATIONS**
- **UNDERSTANDING OF THE OBJECTIVES**
- **HARD WORK**