

NRC'S QUALITY ASSURANCE INITIATIVES

SPECIAL STUDY OF NUCLEAR QUALITY ASSURANCE  
(LONG-TERM REVIEW)

BRIEFING SLIDES FOR PRESENTATION

NOVEMBER 16, 1982

AT

MARBLE HILL NUCLEAR GENERATING STATION

DR. W. D. ALTMAN, PROJECT MANAGER

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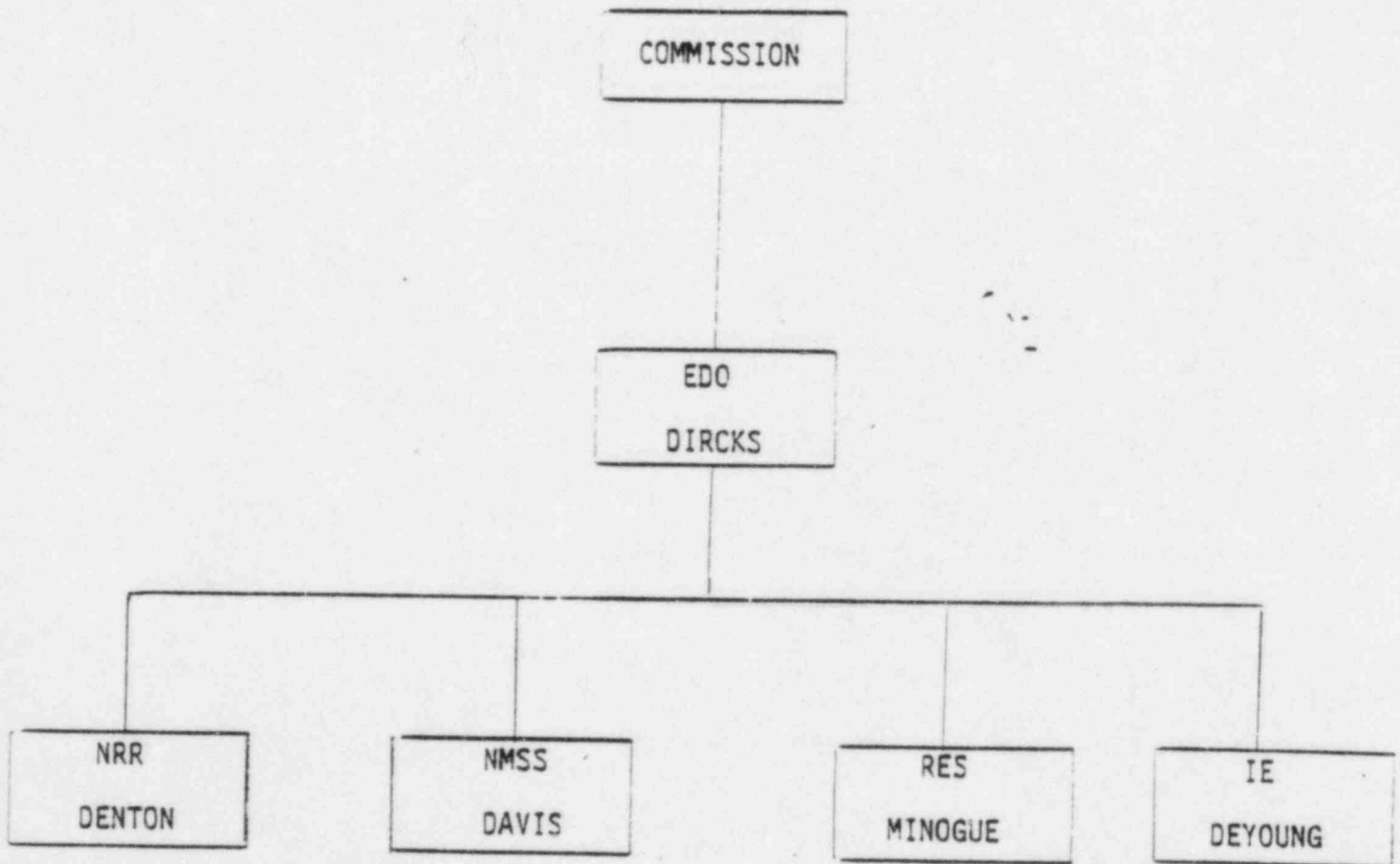
MANAGER, QUALITY STANDARDS  
AND SYSTEMS BRANCH

KIST AND ASSOCIATES

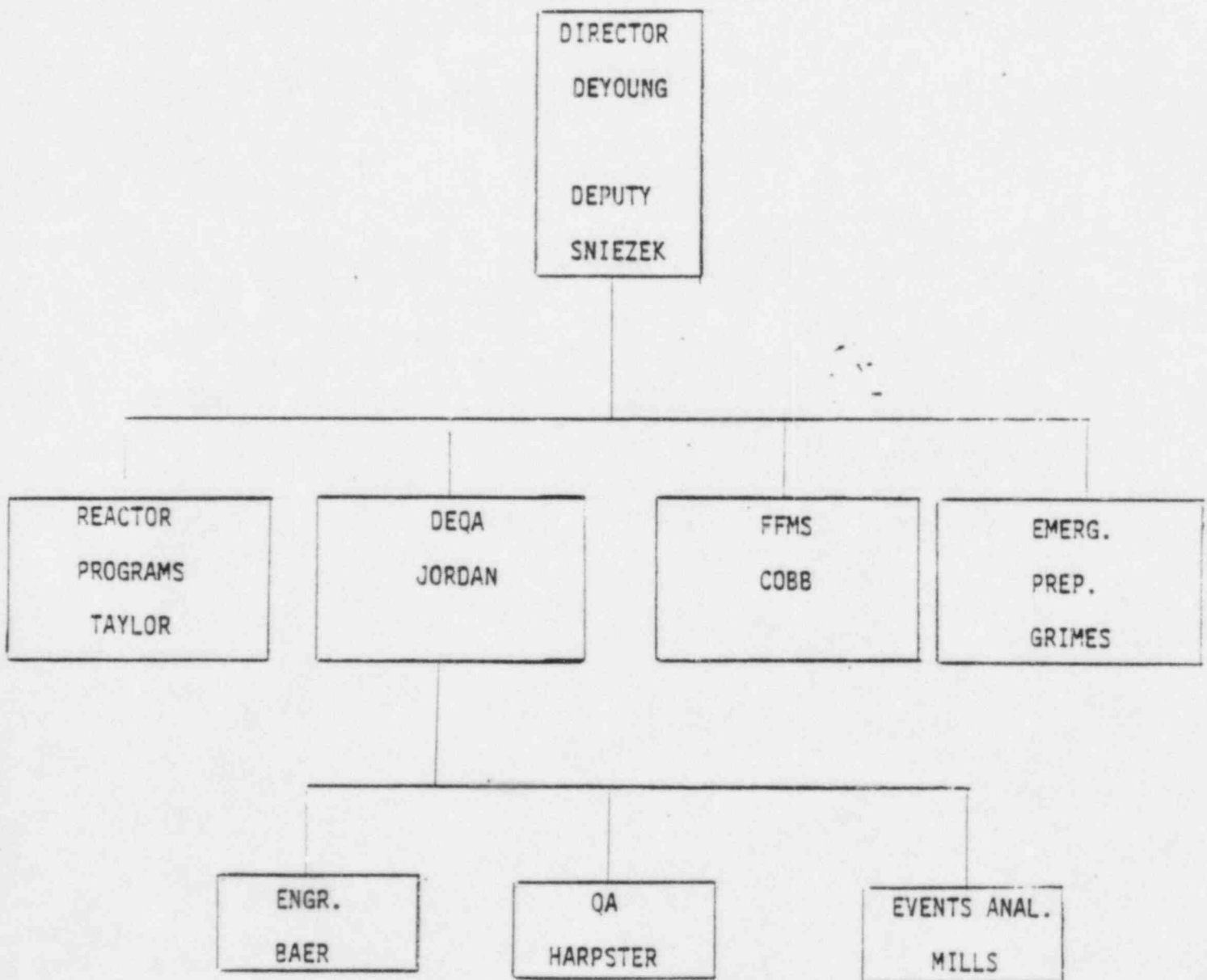
RICHARD KLECKNER

VICE PRESIDENT, N.C.  
KIST & ASSOCIATES

NRC



IE



## BACKGROUND

- ° OVER THE PAST SEVERAL YEARS THERE HAS BEEN A SERIES OF WELL PUBLICIZED PROBLEMS REGARDING THE QUALITY OF CONSTRUCTION AT SEVERAL NUCLEAR POWER PLANT PROJECTS
- ° PLANTS RECEIVING WIDESPREAD ATTENTION INCLUDE:
  - MARBLE HILL
  - MIDLAND
  - ZIMMER
  - SOUTH TEXAS
  - DIABLO CANYON
- ° THE PERCEIVED SEVERITY OF THE QUALITY PROBLEMS AND THE ATTENDANT PUBLICITY AND PUBLIC INTEREST HAVE CAUSED THE CONGRESS AND THE NRC COMMISSIONERS TO QUESTION
  - THE ABILITY OF INDUSTRY TO CONSTRUCT NUCLEAR PLANTS IN A MANNER CONSISTENT WITH PUBLIC SAFETY
  - THE ABILITY OF THE NRC STAFF TO PROVIDE ASSURANCE THAT INDUSTRY HAS CONSTRUCTED PLANTS IN A MANNER CONSISTENT WITH PUBLIC SAFETY
- ° AS A RESULT, THE INDUSTRY AND THE NRC ARE JOINTLY FACING AN EROSION IN THE PUBLIC'S CONFIDENCE IN OUR ABILITY TO BUILD, LICENSE, AND OPERATE NUCLEAR POWER PLANTS IN A MANNER CONSISTENT WITH PUBLIC SAFETY

CHAIRMAN

November 27, 1981

Terz H.

MEMORANDUM FOR: William J. Dircks  
Executive Director for Operations  
FROM: Nunzio J. Palladino  
SUBJECT: QUALITY ASSURANCE

NRC needs to take actions that will result in improved quality assurance at nuclear power plants.

Steps we are taking or planning, as well as other steps that could be taken, were brought up during our testimony to Congressman Udall's Subcommittee last week. A list of corrective measures would include improvements to our inspection and enforcement program as well as considerations such as third party audits, strict sanctions against non-performers, approved bidders lists, and certified independent performance audits of each utility's QA activities.

I would like you to pull together the various approaches that could be taken to strengthen quality assurance, and provide the Commission a preliminary evaluation of the ones that appear most promising from an effectiveness and cost standpoint.

I believe it is desirable to have an initial paper on your recommendations by December 11, 1981. The Commission can then focus on the areas deemed worthy of implementation for further study by the Staff.

cc: Commissioner Gilinsky  
Commissioner Bradford  
Commissioner Ahearne  
Commissioner Roberts  
SECY  
OGC  
OPE  
ACRS

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U.S. HOUSE OF REPRESENTATIVES  
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS  
SUBCOMMITTEE ON ENERGY AND THE ENVIRONMENT

OVERSIGHT HEARING ON  
QUALITY ASSURANCE AT THE ZIMMER NUCLEAR STATION

STATEMENT OF THE HON. MORRIS K. UDALL

Tuesday, September 14, 9:45 A.M.

On June 10 of this year the Subcommittee held an oversight hearing to consider the quality assurance (QA) breakdown at the Zimmer nuclear powerplant. In this case and possibly others there has been a widespread failure to adhere to the NRC's quality assurance requirements. At Zimmer, the severity of the problem was recognized only after construction was virtually complete. My primary concern now centers on the NRC's ability to determine that a reactor can be safely operated following a QA breakdown like that at Zimmer.

To give some idea of the extent of the Zimmer problem, I will indicate briefly the nature of some of the issues that must be addressed prior to issuance of an operating license.

- Deficient weld procedures.
- Apparent falsification of weld procedure test data.
- Insufficient documentation to demonstrate that many of the 2000 welders who have worked at the Zimmer site were qualified for the work they performed. The NRC has informed me that, "The potential impact of the (inadequate) welder qualification records is that a substantial number of welds may have to be replaced."

-The chemical and physical properties of certain safety related piping cannot be documented. The NRC staff has stated that, "The potential impact of the loss of traceable piping is that a substantial amount of such piping may have to be replaced."

-Significant quantities of safety related materials were purchased from vendors not qualified to supply such materials. The NRC has stated that, "The potential impact of the material purchases is that installed materials may have to be replaced."

While the June 10 hearing yielded useful qualitative information, NRC staff were vague with regard to specifics. Testimony at the hearing and subsequent correspondence cause me to question whether the NRC staff is on top of the problem. Today's hearing is a direct result of my not being satisfied with information that we have been provided to date.

In addition to our having been provided incomplete information, there are other disturbing aspects of this matter. I am concerned, as I said on June 10, that the NRC staff has not required an independent audit of the Zimmer plant. It seems unrealistic to have confidence that the company that neglected quality assurance for so many years will on its own fully uncover the deficiencies resulting from its neglect. An independent audit is even more important in view of the NRC suggesting that they have



insufficient staff to address the important Zimmer issues in a timely fashion.

My intent now is to compile a record that gives a much better picture than has been presented to date of the status and prognosis of the Zimmer project. I hope to get an idea of the major corrective actions now known to be necessary prior to plant operation. I also want to know what will be required if existing uncertainties cannot be resolved through ongoing reviews.

The belated discovery of the Zimmer problem, the manner in which it came to light, and subsequent Commission actions create doubt that the NRC is willing and able to make sure that the Zimmer deficiencies are found and corrected. I hope therefore that the NRC witnesses will take advantage of this and subsequent opportunities to establish confidence that they are fulfilling their responsibility to protect the public health and safety.

In addition to the NRC, we will hear today from representatives of the City of Cincinnati Environmental Advisory Council, the Cincinnati Gas & Electric Company, Kaiser Engineers, the State of Ohio Division of Boiler Inspection, and the Government Accountability Project.



# UNITED STATES NUCLEAR REGULATORY COMMISSION

Office of Public Affairs  
Washington, D.C. 20555

No. S-14-82  
Tel. 301/492-7715

FOR IMMEDIATE RELEASE

Remarks by  
Nunzio J. Palladino, Chairman  
U. S. Nuclear Regulatory Commission  
at the  
INPO Conference of Chief Executive Officers  
of  
Nuclear Facilities  
Atlanta, Georgia  
October 5, 1982

## "MEETING THE CHALLENGE FOR A NUCLEAR FUTURE"

Your utilities need public confidence to survive and prosper. It seems to me that confidence in civilian nuclear activities requires two things to happen: first, nuclear power plants must provide reliable, affordable electricity without accidents for a long period of time; and, second, there must be a broad public perception that the nuclear industry maintains the highest standards, virtually unsurpassed anywhere else in business and the professions. Said in another way, I think confidence in civilian nuclear power requires solid indications of a genuine determination by you to run a very tight ship and to take firm responsibility for public safety.

For today let me concentrate on construction quality assurance.

I continue to be concerned that some of you need to do more to shore up your own and the public's confidence in the quality assurance of your construction operations.

Quality assurance, or QA, should be the central focus now for all the utilities building nuclear plants. The Commission has considered quality assurance to be a key factor in the design and construction of nuclear power plants for many years. The problems that have been identified recently indicate that the fundamental cause of most design and construction deficiencies is the lack of total management commitment to quality.

If senior managers such as you have a strong commitment to quality, and if you indoctrinate capable project management teams with that commitment, then these teams will be able to communicate that commitment to all other involved parties. Specifically, the project management team

#### CONGRESSIONAL AND COMMISSION INTEREST

- ° A NUMBER OF CONGRESSIONAL HEARINGS AND COMMISSION MEETINGS HAVE BEEN HELD RECENTLY ON THE SUBJECT OF QUALITY ASSURANCE IN THE NUCLEAR INDUSTRY. RESULTS OF THIS HIGH LEVEL ATTENTION INCLUDE:
  - CONGRESSIONAL LEGISLATION (FORD AMENDMENT) REQUIRING NRC TO CONDUCT AN INDEPTH STUDY OF QUALITY IN CONSTRUCTION, INCLUDING A PILOT PROGRAM TO TEST SEVERAL ALTERNATIVES
  - COMMISSION APPROVAL OF A SERIES OF NRC INITIATIVES DESIGNED TO ASSURE QUALITY IN CONSTRUCTION AND NRC'S ABILITY TO MONITOR AND EVALUATE IT

FORD AMENDMENT

AT LEAST ONE RESIDENT INSPECTOR AT EVERY CONSTRUCTION SITE GREATER THAN 15% COMPLETE (END FY 82)

STUDY OF EXISTING AND ALTERNATIVE PROGRAMS FOR IMPROVING QUALITY ASSURANCE

- ° MORE PRESCRIPTIVE APPROACH FOR PRINCIPAL ARCHITECTURAL AND ENGINEERING CRITERIA
- ° CONDITIONING CP ON DEMONSTRATION OF QA MANAGEMENT CAPABILITY
- ° USE OF AUDITORS/INSPECTORS FROM ASSOCIATION OF PROFESSIONALS
- ° IMPROVEMENT OF NRC ORGANIZATION AND PROGRAMS FOR QA
- ° CONDITIONING CP ON LICENSEE USE OF INDEPENDENT INSPECTORS TO AUDIT ITS QA PROGRAM

PILOT PROGRAM

- ° REVIEW AND EVALUATE ABOVE CONCEPTS
- ° INDEPENDENT INSPECTORS FOR AUDITING QA
- ° AT LEAST THREE CONSTRUCTION SITES

REPORT TO CONGRESS

- ° 15 MONTHS AFTER ENACTMENT
- ° ACCOMPANIED BY COMMISSION RECOMMENDATIONS
- ° TO INCLUDE INPUT RECEIVED FROM PUBLIC, LICENSEES, ACRS, AND PROFESSIONAL GROUPS

INITIATIVES ARE DESIGNED TO:

- ° ESTABLISH ADDITIONAL CONFIDENCE IN THE QUALITY OF DESIGN AND CONSTRUCTION ACTIVITIES
- ° IMPROVE THE MANAGEMENT CONTROL OF QUALITY
- ° IMPROVE THE NRC CAPABILITY TO EVALUATE THE IMPLEMENTATION OF LICENSEE PROGRAMS.
- ° SATISFY THE DIRECTION PROVIDED THE NRC IN AN AMENDMENT ACCEPTED BY THE HOUSE AND SENATE CONFEREES IN THEIR JOINT CONSIDERATION OF THE NRC'S FY 82-83 AUTHORIZATION BILL.

INITIATIVES FALL INTO THE FOLLOWING CATEGORIES:

- A. MEASURES AT NEAR-TERM OPERATING LICENSE FACILITIES
  - 1. SELF EVALUATIONS
  - 2. REGIONAL EVALUATIONS
  - 3. INDEPENDENT DESIGN REVIEWS
- B. INDUSTRY INITIATIVES
  - 1. INPO EVALUATIONS
  - 2. UTILITY AND THIRD PARTY EVALUATIONS
- C. CONSTRUCTION INSPECTION PROGRAM CHANGES
  - 1. REVISE PROCEDURES AND INCREASE RESOURCES
  - 2. CONSTRUCTION ASSESSMENT TEAM INSPECTIONS (CAT)
  - 3. INTEGRATED DESIGN INSPECTIONS (NRC)
  - 4. EVALUATION OF REPORTED INFORMATION
- D. DETERMINE FEASIBILITY OF DESIGNATED REPRESENTATIVES (LIKE FAA)
- E. MANAGEMENT OF QUALITY
  - 1. MANAGEMENT SEMINARS
  - 2. QUALIFICATION & CERTIFICATION OF QA/QC PERSONNEL
  - 3. CRAFTSMANSHIP
- F. LONG-TERM REVIEW

LEAD NRC STAFF RESPONSIBILITIES FOR QA INITIATIVES

NTOL - SELF EVALUATION	NRR
NTOL - REGIONAL EVALUATION	REGIONS
NTOL - INDEPENDENT DESIGN REVIEW	NRR
INDUSTRY INITIATIVE	IE
CONSTRUCTION INSPECTION PROGRAM CHANGES	IE
CONSTRUCTION ASSESSMENT ... TEAM INSPECTION	IE
INTEGRATED DESIGN INSPECTIONS	IE
EVALUATION OF REPORTED INFORMATION	IE
DESIGNATED REPRESENTATIVES	IE
MANAGEMENT ... PROGRAMS	IE
CERTIFICATION ... PERSONNEL	IE
CRAFTSMANSHIP	IE
LONG TERM REVIEW	IE

#### PURPOSE OF VISIT

- ° THIS TEAM OF NRC AND CONTRACTOR SCIENTISTS, ENGINEERS, AND QUALITY PROFESSIONALS IS HERE AS A RESULT OF BOTH THE CONGRESSIONAL MANDATE TO STUDY QUALITY IN CONSTRUCTION AND THE NRC INITIATIVES IN QUALITY ASSURANCE
  
- ° THE PURPOSE OF OUR VISIT IS TO STUDY YOUR PROJECT MANAGEMENT AND QUALITY ASSURANCE PROGRAMS AS ONE OF A SERIES OF CASE STUDIES AT NUCLEAR PLANTS ACROSS THE NATION



## LONG-TERM REVIEW

### STUDY MANDATED BY

1. SECY 82-352
2. NRC'S FY 82-83 AUTHORIZATION BILL (FORD AMENDMENT)

### OBJECT

1. COMPREHENSIVE LOOK AT PAST QUALITY PROBLEMS TO DETERMINE ROOT CAUSES
2. REVIEW OF PROGRAMS IN WHICH QUALITY PROBLEMS HAVE NOT BEEN IDENTIFIED  
TO DETERMINE REASONS FOR APPARENT SUCCESS
3. PROVIDE RECOMMENDATIONS FOR FUTURE NRC QA PROGRAM
4. SATISFY REQUIREMENTS IN FORD AMENDMENT

## LONG-TERM REVIEW

### APPROACH

1. DEVELOP SERIES OF QUALITY ASSURANCE CASE STUDIES AT SELECTED LICENSEE PLANTS. VISIT SEVERAL UTILITIES HAVING HAD SERIOUS QUALITY PROBLEMS AT SEVERAL THAT HAVE NOT.
2. FROM THE CASE STUDIES, DETERMINE ESSENTIAL UNDERLYING CHARACTERISTICS OF SUCCESSFUL AND UNSUCCESSFUL PROGRAMS. ALSO, DETERMINE WHAT ACTIONS NECESSARY TO SOLVE PROBLEMS AND VALUE/IMPACT OF SOLUTIONS.
3. INTERGRATE RESULTS OF PARALLEL SUBSTUDIES WITH SERIES OF CASE STUDIES. DEVELOP FINDINGS, RECOMMENDATIONS, REPORTS.

## LONG-TERM REVIEW

### LTR SUBTASKS

1. QUALITY ASSURANCE CASE STUDIES (INCL. SITE VISITS)
2. REVIEW AND ANALYSIS OF NRC'S QA PROGRAM
3. REVIEW AND ANALYSIS OF OUTSIDE PROGRAMS
4. STUDY ON QUALIFICATION/CERTIFICATION
5. ANALYSIS OF FORD AMENDMENT ALTERNATIVES (INCLUDING PILOT PROGRAM)
6. PILOT PROGRAM
7. ESTABLISHMENT OF ADVISORY PANEL
8. STUDY OF CONTRACTS AND PROCUREMENT PROCESS
9. INTERFACE WITH OUTSIDE GROUPS
10. WRITING OF REPORTS

## SCOPE

- ° TWELVE TO FIFTEEN SITE SPECIFIC CASE STUDIES, INCLUDING BOTH PLANTS UNDER CONSTRUCTION, AND IN OPERATION
- ° EFFORT:                      NRC                      3-4 MY  
                                 CONTRACTOR                      10-12 MY
- ° DURATION:              15-18 months
- ° ADVISORY PANEL
- ° INPUT FROM PUBLIC, LICENSEES, ACRS, PROFESSIONALS, ETC.

## LTR TASKS

### 1. QUALITY ASSURANCE CASE STUDIES

#### ° PRE FIELD ACTIVITY

- DEVELOPMENT OF ASSESSMENT PLAN AND METHODOLOGY
- DEVELOPMENT OF REPORT FORMAT
- PLANT VISITS MUST CONSIDER LTR ISSUES AND FORD ISSUES
- SCHEDULING
- FAMILIARIZATION WITH PLANT AND PLANT QA PROGRAM AND HISTORY

#### ° FIELD ACTIVITY

- VISIT TO REGIONAL OFFICE
- VISIT TO CORPORATE OFFICE
- VISIT TO PLANT SITE
- DISCUSSIONS WITH REGIONAL AND RESIDENT INSPECTORS
- DISCUSSIONS WITH LICENSEE PERSONNEL, CONTRACTORS
- REVIEW OF QA PROGRAM, SELECTED RECORDS
- PLANT WALK THROUGH

#### ° POST FIELD ACTIVITY

- ANALYSIS OF FINDINGS
- POSTULATION AND EVALUATION OF DIFFERENT APPROACHES
- INPUT TO GENERIC REPORT

#### NEED FOR UTILITY INPUT AND ASSISTANCE

- ° THE GENERIC RESULTS OF THIS SERIES OF SITE SPECIFIC CASE STUDIES AND PARALLEL STUDIES OF GERMANE TOPICS WILL FORM THE BASIS OF
  - REPORTS TO THE NRC COMMISSIONERS
  - REPORT TO CONGRESS
  - NRC'S FUTURE POLICY AND PROGRAM IN QUALITY ASSURANCE
- ° THE EMPHASIS OF OUR EFFORT WILL BE TO DETERMINE UNDERLYING PROGRAMMATIC CHARACTERISTICS OF PROJECT MANAGEMENT AND QUALITY ASSURANCE THAT EITHER
  - CONTRIBUTE TO THE OVERALL SUCCESS OF THE PROJECT
  - CONTRIBUTE TO THE DEVELOPMENT OF RESULTS THAT FAIL TO MEET THE STANDARDS OF THE INDUSTRY, THE NRC, AND THE PUBLIC FOR QUALITY IN A NUCLEAR POWER PLANT
- ° THIS IS NOT AN INSPECTION. WE ARE NOT HERE TO INSPECT OR AUDIT OR SECOND GUESS. WE ARE TO LEARN AND TO DEVELOP REAL WORLD INFORMATION TO HELP STRUCTURE CONGRESSIONAL, NRC, AND INDUSTRY POLICIES FOR QUALITY IN THE NUCLEAR INDUSTRY FOR THIS DECADE AND BEYOND
- ° TO BE SUCCESSFUL, WE NEED YOUR HELP, COOPERATION, AND CANDOR. WE THANK YOU FOR YOUR PARTICIPATION IN THIS MAJOR NRC POLICY STUDY

SUMMARY  
LONG-TERM REVIEW

REASON

- ° COMPREHENSIVE STUDY TO
  - DETERMINE ROOT CAUSES OF QUALITY PROBLEMS AT PLANTS WITH IDENTIFIED DEFICIENCIES
  - DETERMINE UNDERLYING CHARACTERISTICS OF SUCCESSFUL QUALITY PROGRAMS
  - DEVELOP BLUEPRINT FOR FUTURE FOR NRC AND LICENSEE QUALITY PROGRAMS

SCOPE

- ° NRC STAFF STUDY
  - PERFORMED BY NRC STAFF
  - LED BY HQ, ASSISTANCE FROM REGIONS, CONTRACTORS
- ° EXAMINATION OF EXISTING PROGRAMS AND PAST PROBLEMS WILL INCLUDE
  - REVIEW OF EXISTING DOCUMENTATION (PLANS, INVESTIGATIONS, ETC.)
  - VISITS/DISCUSSIONS WITH REGIONS AND RESIDENTS
  - VISITS TO PLANT SITES (TWELVE TO FIFTEEN)
- ° EMPHASIS ON GENERIC IMPLICATIONS
- ° INCLUDES BOTH PLANTS UNDER CONSTRUCTION AND OPERATING SITES
- ° WILL EXAMINE NRC QA PROGRAM AND POLICIES AS WELL AS LICENSEES/VENDORS/ CONTRACTORS
- ° WILL LOOK AT OUTSIDE QA PROGRAMS (NON-NUCLEAR AND FOREIGN NUCLEAR)
- ° WILL INCLUDE COST/BENEFIT OF VARIOUS ALTERNATIVES

SUMMARY  
LONG-TERM REVIEW

OTHER

- ° REVIEW WILL BE RESPONSIVE TO FORD AMENDMENT
- ° FORD AMENDMENT SETS FIFTEEN MONTH TIME FRAME
- ° WILL SOLICIT INPUT FROM PUBLIC, LICENSEES, ACRS, PROFESSIONAL SOCIETIES, UNIONS
- ° PLAN TO ESTABLISH ADVISORY PANEL

EXPECTED RESULTS

- ° CHARACTERIZATION OF SUCCESSFUL AND UNSUCCESSFUL PROGRAMS, ROOT CAUSES
- ° RECOMMENDATIONS FOR CHANGES/IMPROVEMENTS IN NRC AND LICENSEE QA PROGRAMS
- ° IDENTIFICATION OF NEEDED LEGISLATION
- ° REPORT TO CONGRESS TO SATISFY REQUIREMENTS OF FORD AMENDMENT



## CHRONOLOGY

### CONGRESSIONAL OVERSIGHT HEARINGS ON QA HELD IN THE HOUSE OF REPRESENTATIVES:

- ° SUBCOMMITTEE ON ENERGY AND ENVIRONMENT; COMMITTEE ON INTERIOR AND INSULAR AFFAIRS - NOVEMBER 19, 1981
- ° SUBCOMMITTEE ON ENVIRONMENT, ENERGY, AND NATURAL RESOURCES; COMMITTEE ON GOVERNMENT OPERATIONS - DECEMBER 14, 1981

NOVEMBER 27, 1981 - CHAIRMAN DIRECTED STAFF TO ASSEMBLE APPROACHES TO STRENGTHEN QA

DECEMBER 1, 1981 - CHAIRMAN PALLADINO, IN A SPEECH TO AIF, CHALLENGED THE NUCLEAR INDUSTRY TO REEXAMINE AND UPGRADE ITS QUALITY ASSURANCE PROGRAMS

JANUARY 29, 1982 - NRC STAFF BRIEFED COMMISSION ON PRELIMINARY EVALUATIONS OF VARIOUS QA INITIATIVES

FEBRUARY 4, 1982 - INPO BRIEFED COMMISSION ON INDUSTRY ACTIONS

FEBRUARY 10, 1982 - STAFF DIRECTED TO PREPARE MORE DEFINITIVE PLAN, INCLUDING SCHEDULE AND RESOURCES

MARCH 4, 1982 - QA PRESENTATION TO ACRS

APRIL 12, 1982 - MEETING WITH INPO TO EXCHANGE QUALITY ASSURANCE INFORMATION

MAY 19, 1982 - SENIOR AGENCY MANAGEMENT MEETING TO DISCUSS QA STRATEGY

### CHRONOLOGY

JUNE 10, 1982	REGION III ADMINISTRATOR TESTIFIES BEFORE CONGRESS
JULY 15, 1982	NRC STAFF BRIEFED COMMISSION ON STAFF PLANS FOR QUALITY ASSURANCE
AUGUST 20, 1982	EDO SENT STAFF PAPER ON ASSURANCE OF QUALITY TO THE COMMISSION (SECY 82-352)
SEPT. 14, 1982	REGION III ADMINISTRATOR TESTIFIES BEFORE CONGRESS
SEPT. 20, 1982	IE BRIEFED COMMISSION'S ASSISTANTS, CHAIRMAN ON QA INITIATIVES IN SECY 82-352
SEPT. 29, 1982	COMMISSION BRIEFING ON SECY 82-352
OCT. 5, 1982	CHAIRMAN PALLIDINO SPEAKS BEFORE INPO CONFERENCE OF CHIEF EXECUTIVE OFFICERS, SAYS QA SHOULD BE CENTRAL FOCUS FOR UTILITIES BUILDING NUCLEAR PLANTS
OCT. 13, 1982	CHAIRMAN PALLIDINO SPEAKS BEFORE AMERICAN SOCIETY OF QC. INDICATES EFFECTIVE QA NECESSARY TO RESTORE PUBLIC CONFIDENCE IN NUCLEAR POWER
OCT. 18, 1982	COMMISSIONER ASSELSTINE SPEAKS BEFORE ANS EXECUTIVE CONFERENCE ON QUALITY ASSURANCE

THE ATTACHED CLIPPING WAS PUBLISHED IN THE Louisville Courier Journal

Nov. 17, 1982 19

# Zimmer fiasco spotlights nuclear risk

TO HEAR the industry's lobbyists tell it, nuclear power's worst enemies are environmentalists. That's because the latter keep saying that this form of electric generation poses risks no private insurer is willing to underwrite, produces malignant wastes that nobody has yet decided how to get rid of, and other such unpleasant facts.

Not so. A more effective enemy could be found as close as the nearest mirror. The Zimmer nuclear plant across the river from Kentucky near Cincinnati is only one of several cases in point. It's 98 percent complete, and, as the U.S. Nuclear Regulatory Commission indicates in something broader than a hint, is so shoddily built that it may never get an operating license.

Now, several years too late, the NRC has halted all safety-related construction because "problems have been found at a rate faster than they can be redressed." As much as half the welding at Zimmer is said to be of doubtful quality, and that's only the beginning.

This doubtless says something unfavorable about America's construction industry — at least when it's confronted by a project where all the work must be of high quality. But it says more about an industry that spends so much of its time complaining of over-regulation and so much of its money on propaganda. In fact, nuclear construction has been so underregulated that mistakes which could make the \$1.7 billion Zimmer plant a total loss weren't found until it may be too late to remedy them.

That's not peculiar to Zimmer. Defects that forced a long construction delay at Public Service Indiana's Marble Hill plant were discovered chiefly because of (1) a concrete worker who blew the whistle and then (2) the efforts of private citizens who had to complain long and loudly to get any official attention.

The case at Zimmer was even more

dumbfounding. In a plot a TV producer might have rejected as far-fetched, private investigator Thomas Applegate, working on a divorce case, discovered evidence that many time cards had been falsified. That led to further investigation by Mr. Applegate and others, to discovery of falsified quality assurance records and harassment of quality-control inspectors and, finally, to enough noise to arouse a reluctant NRC from its slumber.

The latest news about Zimmer follows a new government study saying that the worst possible accident at Marble Hill could cost 12,000 deaths within a year, 150,000 cases of radiation disease, and more than \$87 billion in property loss. Most unlikely,

replied the nuclear industry. Its old chestnut, that the risk of serious nuclear accident is akin to that of being hit by a meteorite, popped up again.

Unfortunately, however, meteorites do sometimes hit people. Just the other day, almost as if to answer some nuclear salesman's pitch, the small Connecticut town of Wethersfield was hit by a meteorite for the second time within 11 years. A grapefruit-size chunk from outer space crashed through a ceiling and wound up beneath the dining room table as a startled family was watching M\*A\*S\*H.

The unlikely can occur. That's why if we must have nuclear power, no one should settle for anything less than strict and honest safety standards.

FOIA-84-293

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