CE-1-A
Topical Report
January 1976
Rev. 13 - 4/4/80

C O M M O N W E A L T H E D I S O N C O M P A N Y

QUALITY ASSURANCE PROGRAM

FOR

NUCLEAR GENERATING STATIONS

COMMONWEALTH EDISON COMPANY
Post Office Box 767
Chicago, Illinois 60690

CE-1-A
Topical Report
January 1976
Rev. 13 - 4/4/80

C O M M O N W E A L T H E D I S O N C O M P A N Y

QUALITY ASSURANCE PROGRAM

FOR

NUCLEAR GENERATING STATIONS

COMMONWEALTH EDISON COMPANY

Post Office Box 767

Chicago, Illinois 60690

Commonwealth Edison

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

AUG 11 RECD

AUG 07 1980

Mr. D. L. Peoples
Director of Nuclear Licensing
Commonwealth Edison Company
P.O. Box 767
Chicago, IL 60690

Dear Mr. Peoples:

SUBJECT: NRC ACCEPTANCE OF REVISIONS TO QA TOPICAL REPORT

We have completed our review of Revisions 11, 12, and 13 to the Commonwealth Edison Company (CECo) Topical Report No. CE-1-A, "Commonwealth Edison Company Quality Assurance Program for Nuclear Generating Stations. The revisions concern general organizational and programmatic changes. You indicated in your transmittal letter that the topical report and these revisions are intended to be applicable to nuclear units identified by Docket Numbers 50-10, 50-237, 50-249, 50-254, 50-265, 50-295, 50-304, 50-373, 50-374, 50-454, 50-455, 50-456, and 50-457.

Based on our evaluation of the proposed changes described in Revisions 11, 12, and 13, we find that your revised topical report continues to meet the criteria of Appendix B to 10 CFR Part 50 and is therefore acceptable. To use the topical report in future license applications, CECo need only reference this topical report in Section 17 of the Safety Analysis Report. We do not intend to repeat our review of this topical report when it is referenced in an application unless changes occur in our acceptance criteria.

Should regulatory criteria or regulations change such that our conclusions about this topical report are invalidated, we will notify you. You will be given the opportunity to revise and resubmit it should you so desire. As noted above, should you desire to reference this topical report in support of quality assurance programs for new nuclear power projects, the basis of our evaluation will be the acceptance criteria included in SRP Sections 17.1 and 17.2, Revision 1. Appropriate changes may, therefore, be necessary.

Programmatic changes by CECo to this topical report are to be submitted to the NRC for review prior to implementation. Organizational changes are to be submitted no later than 30 days after announcement.

Please replace our letter of November 8, 1979 with this letter, renumber the report as CE-1-A, Revision 13, and submit 36 copies to the NRC. Your transmittal letter should identify the nuclear units to which this revised topical will apply.

Should you have any questions regarding our review or if we can provide assistance, please feel free to contact me or Mr. William Belke at (301) 492-7741.

Sincerely,

Walter P. Haass

Walter P. Haass, Chief
Quality Assurance Branch
Division of Engineering

NOV 1 3 RECD

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

NOV 3 1979

Mr. W. F. Naughton
Nuclear Licensing Administrator
Boiling Water Reactors
Commonwealth Edison Company
P.O. Box 767
Chicago, IL 60690

Dear Mr. Naughton:

SUBJECT: NRC ACCEPTANCE OF REVISIONS TO QA TOPICAL REPORT

By letter dated September 24, 1979, you submitted Revision 10 to the Commonwealth Edison Topical Report No. CE-1-A, "Commonwealth Edison Company Quality Assurance Program for Nuclear Generating Stations." You indicated in your transmittal letter that the topical report and this revision are intended to be applicable to nuclear units identified by Docket Numbers 50-10, 50-237, 50-249, 50-254, 50-265, 50-295, 50-304, 50-373, 50-374, 50-454, 50-455, 50-456, and 50-457. The revision concerns general organizational changes.

We have evaluated the proposed changes against the acceptance criteria included in SRP Section 17.2 and find them acceptable with the following exception. Since the FSAR for the Byron/Braidwood Stations, Unit Nos. 1 & 2, Docket Nos. 50-454, 50-455, 50-456, and 50-457, is still under review and evaluation against the acceptance criteria included in SRP Section 17.2, Revision 1, "Quality Assurance During the Operations Phase," the topical report is not considered acceptable for the Byron/Braidwood Stations. Accordingly, as a result of our review and evaluation of the Byron/Braidwood Stations, it is expected that either the QA Topical or Section 17.0 of the FSAR will require additional information to meet our present requirements for this FSAR application. With the exception just noted, your revised topical report meets the criteria of Appendix B to 10 CFR Part 50 and is therefore acceptable for use.

Should regulatory criteria or regulations change such that our conclusions about this topical report are invalidated, we will notify you. You will be given the opportunity to revise and resubmit it should you so desire. As noted above, should you desire to reference this topical report in support of quality assurance programs for new nuclear plant projects, the basis of our evaluation will be the acceptance criteria included in SRP Sections 17.1 and 17.2, Revision 1. Appropriate changes will, therefore, be necessary.

Programmatic changes by CECo to this topical report are to be submitted to the NRC for review prior to implementation. Organizational changes are to be submitted no later than 30 days after announcement.

Please replace our letter of September 11, 1979 with this letter, renumber the report as CE-1-A, Revision 10, and submit 36 copies to the NRC. Your transmittal letter should identify the nuclear units to which the report is applicable, as noted above.

Should you have any questions regarding our review or if we can provide assistance, please feel free to contact me or Mr. William Belke at (301) 492-7741.

Sincerely,

Walter P. Haass, Chief
Quality Assurance Branch
Division of Project Management

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SEP 1 1 1979

Mr. R. F. Janecek
Nuclear Licensing Administrator
Boiling Water Reactors
Commonwealth Edison Company
P.O. Box 767
Chicago, IL 60690

Dear Mr. Janecek:

SUBJECT: NRC ACCEPTANCE OF REVISIONS TO QA TOPICAL REPORT

By letters dated June 21, 1979 and July 16, 1979, you submitted Revisions 8 and 9, consisting of revised pages, to the Commonwealth Edison Topical Report No. CE-1-A, "Commonwealth Edison Company Quality Assurance Program for Nuclear Generating Stations." As indicated in the transmittal letter, your topical report and these revisions are applicable to Docket Numbers 50-10, 50-237, 50-249, 50-254, 50-265, 50-295, 50-304, 50-373, 50-374, 50-454, 50-455, 50-456, and 50-457. These revisions concern general organizational changes.

We have evaluated the proposed revisions and have found they do not change our prior conclusions. Your revised topical report meets the criteria of Appendix B to 10 CFR Part 50 and is therefore acceptable. To use the topical report in future license applications, CECo need only reference this topical report in Section 17 of the Safety Analysis Report. We do not intend to repeat our review of this topical report when it is referenced in an application.

Should regulatory criteria or regulations change such that our conclusions about this topical report are invalidated, we will notify you. You will be given the opportunity to revise and resubmit it should you so desire.

Programmatic changes by CECo to this topical report are to be submitted to the NRC for review prior to implementation Organizational changes are to be submitted no later than 30 days after announcement.

Please replace our letter of June 6, 1979 with this letter, renumber the report as CE-1-A, Revision 9, and submit 36 copies to the NRC.

Should you have any questions regarding our review or if we can provide assistance, please feel free to contact me or Mr. William Belke at (301) 492-7741.

Sincerely,

Walter P. Haass

Walter P. Haass, Chief
Quality Assurance Branch
Division of Project Management

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

MAR 1 2 1979

Mr. W. F. Naughton
Nuclear Licensing Administrator
Pressurized Water Reactors
Commonwealth Edison Company
P.O. Box 767
Chicago, Illinois 60690

Dear Mr. Naughton:

SUBJECT: NRC ACCEPTANCE OF ADDENDUM TO QA TOPICAL REPORT

By letter dated February 28, 1979, you submitted Addendum No. 1 consisting of revised pages to the Commonwealth Edison Topical Report No. CE-1-A, "Commonwealth Edison Company Quality Assurance Program for Nuclear Generating Stations." The addendum concerns organizational changes at Zion Nuclear Station, Unit Nos. 1 & 2 (Docket Nos. 50-295 & 50-304).

We have evaluated the proposed addendum and have found that it does not change our prior conclusions. Your revised topical report meets the criteria of Appendix B to 10 CFR Part 50 and is therefore acceptable. To use the topical report in future license applications, CECo need only reference this topical report in Section 17 of the Safety Analysis Report. We do not intend to repeat our review of this topical report when it is referenced in an application.

Should regulatory criteria or regulations change such that our conclusions about this topical report are invalidated, we will notify you. You will be given the opportunity to revise and resubmit it should you so desire. Programmatic changes by CECo to this topical report are to be submitted to the NRC for review prior to implementation. Organizational changes are to be submitted no later than 30 days after announcement.

Please include our acceptance letter of December 13, 1978 for CE-1-A, Revision 6, with this letter in your report and submit 36 copies to the NRC. Also, please indicate in your transmittal letter that these organizational changes will only be applicable to the Zion Nuclear Station, Unit Nos. 1 & 2.

Should you have any questions regarding our review or if we can provide assistance, please feel free to contact me or Mr. William Belke at (301) 492-7741.

Sincerely,

Walter P. Haass

Walter P. Haass, Chief
Quality Assurance Branch
Division of Project Management

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

DEC 13 1978

Mr. M. S. Turbak
Nuclear Licensing Administrator
Boiling Water Reactors
Commonwealth Edison Company
P.O. Box 767
Chicago, Illinois 60690

Dear Mr. Turbak:

SUBJECT: NRC ACCEPTANCE OF REVISION TO QA TOPICAL REPORT

By letter dated November 17, 1978, you submitted Revision 6. consisting of revised pages, to the Commonwealth Edison Topical Report No. CE-1-A, "Commonwealth Edison Company Quality Assurance Program for Nuclear Generating Stations." As indicated in the transmittal letter, your topical report and this revision are applicable to Docket Numbers 50-10, 50-237, 50-249, 50-254, 50-265, 50-295, 50-304, 50-373, 50-374, 50-454, 50-455, 50-456, and 50-457. The revision concerns changes reflecting Regulatory Guide revisions.

We have evaluated the proposed revision and have found that it does not change our prior conclusions. Your revised topical report meets the criteria of Appendix B to 10 CFR Part 50 and is therefore acceptable. To use the topical report in future license applications, CECo need only reference this topical report in Section 17 of the Safety Analysis Report. We do not intend to repeat our review of this topical report when it is referenced in an application.

Should regulatory criteria or regulations change such that our conclusions about this topical report are invalidated, we will notify you. You will be given the opportunity to revise and resubmit it should you so desire.

Programmatic changes by CECo to this topical report are to be submitted to the NRC for review prior to implementation. Organizational changes are to be submitted no later than 30 days after announcement.

Please replace our letter of August 31, 1978 with this letter, renumber the report as CE-1-A, Revision 6, and submit 36 copies to the NRC.

Should you have any questions regarding our review or if we can provide assistance, please feel free to contact me or Mr. William Belke at (301) 492-7741.

Sincerely,

Walter P. Haass

Walter P. Haass, Chief
Quality Assurance Branch
Division of Project Management

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

AUG 3 1 1978

Commonwealth Edison Company
ATTN: Mr. M. S. Turbak
Nuclear Licensing Administrator
Boiling Water Reactors
P.O. Box 767
Chicago, Illinois 60690

Dear Mr. Turbak:

SUBJECT: NRC ACCEPTANCE OF REVISION TO QA TOPICAL REPORT

By letter dated August 11, 1978, you submitted Revision 5, consisting of revised pages, to the Commonwealth Edison Topical Report No. CE-1-A, "Commonwealth Edison Company Quality Assurance Program for Nuclear Generating Stations." The revisions concern changes in organization and job titles, and other changes pertaining to ASME inspections.

We have evaluated the proposed revisions and have found that they do not change our prior conclusions. Your revised topical report meets the criteria of Appendix B to 10 CFR Part 50, and is therefore acceptable. To use the topical report in future license applications, CECo need only reference this topical report in Section 17 of the Safety Analysis Report. We do not intend to repeat our review of this topical report when it is referenced in an application.

Should regulatory criteria or regulations change such that our conclusions about this topical report are invalidated, we will notify you. You will be given the opportunity to revise and resubmit it should you so desire.

Programmatic changes by CECo to this topical report are to be submitted to the NRC for review prior to implementation. Organizational changes are to be submitted no later than 30 days after announcement.

Please replace our letter of Apri 13, 1978 with this letter, renumber the report as CE-1-A, Revision 5, and submit 40 copies to the NRC.

Should you have any questions regarding our review, or if we can provide assistance, please feel free to contact me or Mr. William Belke at (301) 492-7741.

Sincerely,

Walter P. Haass

Walter P. Haass, Chief
Quality Assurance Branch
Division of Project Management

cc: W. Shewski

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

APR 13 1978

Commonwealth Edison Company
ATTN: Mr. M. S. Turbak
Nuclear Licensing Administrator
Boiling Water Reactors
P.O. Box 767
Chicago, Illinois 60690

Dear Mr. Turbak:

SUBJECT: NRC ACCEPTANCE OF REVISION TO QA TOPICAL REPORT

We have evaluated the proposed Revision 4 to the Commonwealth Edison Topical Report No. CE-1-A, "Commonwealth Edison Company Quality Assurance Program for Nuclear Generating Stations." We find that the revision does not degrade the quality assurance program previously accepted and that quality-related activities are to be controlled in accordance with the requirements of Appendix B to 10 CFR Part 50. Per telecon between Mr. W. Shewski of Commonwealth Edison Company and W. Belke of NRC on April 5, 1978, the typo error of ANSI N18.7-1972 on page 2-1 of the topical will be corrected to read ANSI N18.7-1976. Accordingly, with the correction of this typo error, the proposed revision is acceptable.

Programmatic changes by Commonwealth Edison Company to this topical report are to be submitted to the NRC for review prior to implementation. Organizational changes are to be submitted no later than thirty days after announcement.

Please replace our letter of March 24, 1978 with this letter and the enclosed Topical Report Evaluation, renumber the report as CE-1-A, Revision 4, and submit 40 copies to the NRC.

Should you have any questions regarding our review, or if we can provide assistance, please feel free to contact me or Mr. William Belke at (301) 492-7741.

Sincerely,

C. J. Heltemes, Jr., Chief
Quality Assurance Branch
Division of Project Management

Enclosure:
Topical Report Evaluation

cc: W. Shewski

TOPICAL REPORT EVALUATION

Report Number: CE-1-A, Revision 4 (March 10, 1978), Nonproprietary
Report Title: Commonwealth Edison Company Quality Assurance Program for Nuclear Generating Stations
Report Date: March 10, 1978
Originating Organization: Commonwealth Edison Company
Reviewed By: Quality Assurance Branch

Summary of Topical Report

Topical Report CE-1-A, dated March 10, 1978, describes the Quality Assurance (QA) Program which the Commonwealth Edison Company applies to those design, procurement, construction, and operation activities involving safety-related structures, systems, and components of nuclear power plants within the Commonwealth Edison Company's scope of work. CE-1-A dated March 10, 1978, commits Commonwealth Edison Company to comply with the requirements of Appendix B to 10 CFR Part 50 and to follow the QA guidance provided by the NRC in the following Regulatory Guides and ANSI Standard:

1.8, Rev. 1-R; 1.28, 6-7-72; 1.30, 8-11-72; 1.33, Rev. 1; 1.37, 3-16-73; 1.38, Rev. 2; 1.39, Rev. 2; 1.58, 8-73; 1.64, Rev. 2; 1.74, 2-74; 1.88, Rev. 2; 1.94, Rev. 1; 1.116, Rev. 0-R; 1.123, Rev. 1; and to ANSI N45.2.12, Draft 3, Rev. 4, 2-74.

Exceptions or alternatives to this topical report for specific plants identified in the Safety Analysis Report will take precedence over commitments in this topical report.

Commonwealth Edison Company has provided for our evaluation a detailed organizational description of those individuals and groups involved in carrying out activities required by the QA program and a delineation of duties, responsibilities, and authority of those organizational elements involved in the QA program. CE-1-A dated March 10, 1978, contains a description of the measures used to carry out the Commonwealth Edison Company's QA program activities and describes how applicable requirements of Appendix B will be satisfied by the administration and implementation of these measures.

Summary of Regulatory Evaluation

We have evaluated the QA program and the organizations responsible for QA functions as described in CE-1-A dated March 10, 1978. We find that QA policy and direction originate at an acceptably high management level and are effectively communicated to other parts of the organization. Those performing QA functions have responsibility and authority commensurate with their duties in implementing the QA program. We also find that

measures have been established, to be implemented by written procedures and instructions, which address each of the criteria of Appendix B and demonstrate conformance with each criterion.

Based on our review and evaluation of CE-1-A, dated March 10, 1978, we conclude that:

1. The organizations and persons performing QA functions within Commonwealth Edison Company have the required independence and authority to effectively carry out the QA program without reservation or undue influence from those directly responsible for costs and schedules, and

2. The Commonwealth Edison Company QA program contains the necessary requirements, procedures, and controls to demonstrate that quality-related activities will be conducted in accordance with the requirements of Appendix B to 10 CFR Part 50.

Regulatory Position

It is the staff's position that the Commonwealth Edison Company Quality Assurance Program for Nuclear Generating Stations, Topical Report CE-1-A, March 10, 1978, is acceptable for use in the design, procurement, construction, and operation of nuclear power plants. The topical report can be referenced by report number in Section 17 of future Safety Analysis Reports.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

MAR 2 4 1978

Commonwealth Edison Company
ATTN: Mr. M. S. Turbak
Nuclear Licensing Administrator
Boiling Water Reactors
P. O. Box 767
Chicago, Illinois 60690

Dear Mr. Turbak:

SUBJECT: NRC ACCEPTANCE OF REVISION TO QA TOPICAL REPORT

We have evaluated the proposed Revision 3 to the Commonwealth Edison Company (CECo) Topical Report No. CE-1-A, "Commonwealth Edison Company Quality Assurance Program for Nuclear Generating Stations." We find that the revision does not degrade the quality assurance program previously accepted and that quality-related activities are to be controlled in accordance with the requirements of Appendix B to 10 CFR Part 50. Accordingly, the proposed revision is acceptable for the following plants:

Dresden 1, 2, 3 (Docket Nos. 50-10/237/249),
Quad Cities 1, 2 (Docket Nos. 50-254/265),
Zion 1, 2 (Docket Nos. 50-295/304),
Byron 1, 2 (Docket Nos. 50-454/455)
and Braidwood 1, 2 (Docket Nos. 50-456/457).

Recent guidance regarding updating of the QA topical (Reference: NRC letter, C. J. Heltemes to Mr. Turbak dated February 14, 1978) was issued in conjunction with the review of the LaSalle 1 and 2 application. Since Revision 3 to the QA topical does not address this additional guidance needed for the LaSalle application as previously noted, CECo is still requested to modify the QA topical in accordance with the reference letter.

Programmatic changes by Commonwealth Edison Company to this topical report are to be submitted to the NRC for review prior to implementation. Organizational changes are to be submitted no later than thirty days after announcement.

Please replace our letter of December 12, 1977 with this letter in Revision 3 to the topical report. Renumber the report as CE-1-A, Revision 3, and submit 40 copies to the NRC.

Should you have any questions regarding our review, or if we can provide assistance, please feel free to contact me or Mr. William Belke at (301) 492-7741.

Sincerely,

C. J. Heltemes, Jr., Chief
Quality Assurance Branch
Division of Project Management

cc: Walt Shewski

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

DEC 12 1977

Commonwealth Edison Company
ATTN: Mr. M. S. Turbak
Nuclear Licensing Administrator
Boiling Water Reactors
P. O. Box 767
Chicago, Illinois 60690

Dear Mr. Turbak:

SUBJECT: NRC ACCEPTANCE OF REVISION TO QA TOPICAL REPORT

We have evaluated the proposed Revision 2 to the Commonwealth Edison Topical Report No. CE-1-A, "Commonwealth Edison Company Quality Assurance Program for Nuclear Generating Stations." We find that the revision does not degrade the quality assurance program previously accepted and that quality-related activities are to be controlled in accordance with the requirements of Appendix B to 10 CFR Part 50. Accordingly, the proposed revision is acceptable.

Programmatic changes by Commonwealth Edison Company to this topical report are to be submitted to the NRC for review prior to implementation. Organizational changes are to be submitted no later than thirty days after announcement.

Please replace our letter of August 11, 1976 with this letter in Revision 2 to the topical report. Renumber the report as CE-1-A, Revision 2, and submit 40 copies to the NRC.

Should you have any questions regarding our review, or if we can provide assistance, please feel free to contact me or Mr. William Belke at (301) 492-7741.

Sincerely,

C. J. Heltemes, Jr., Chief
Quality Assurance Branch
Division of Project Management

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

DEC 2 9 1975

Mr. W. B. Behnke
Executive Vice President
Commonwealth Edison Company
P. O. Box 767
Chicago, Illinois 60690

Dear Mr. Behnke:

We have reviewed and evaluated the Commonwealth Edison Company Quality Assurance Program for Nuclear Generating Stations (Topical Report CE-1, June 1975). We find that it describes an acceptable Quality Assurance Program for the design, procurement, construction and operation activities which are within the Commonwealth Edison Company's scope of work for nuclear power plants.

For the Commonwealth Edison Quality Assurance Program for Nuclear Generating Stations, you need only reference this Topical Report in Section 17 of license applications. We do not intend to repeat our review of this Topical Report when it is referenced in an application.

Should regulatory criteria or regulations change such that our conclusions about this Topical Report are invalidated, we will notify you. You will be given the opportunity to revise and resubmit it should you so desire.

Changes or modifications which affect organizational or procedural requirements of the Commonwealth Edison Company Quality Assurance Program shall be submitted to the Nuclear Regulatory Commission prior to incorporation in this Topical Report.

Please include a copy of this letter and our evaluation in each of the reports and resubmit 70 copies to the NRC.

Sincerely,

Richard H. Vollmer, Chief
Quality Assurance Branch
Division of Reactor Licensing

Enclosure:
NRC Topical Report Evaluation of
Commonwealth Edison Company Topical
Report CE-1, June 1975

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

AUG 1 1 1976

Mr. G. A. Abrell
Nuclear Licensing Administrator
Boiling Water Reactors
Commonwealth Edison Company
P. O. Box 767
Chicago, Illinois 60690

Dear Mr. Abrell:

We have reviewed and evaluated your proposed Revision 1 to the Commonwealth Edison Topical Report CE-1-A "Commonwealth Edison Company Quality Assurance Program For Nuclear Generating Stations."

We find the revision does not degrade the quality assurance program previously approved, that the criteria in Appendix B to 10 CFR Part 50 are met, and that the revision is therefore acceptable.

Please reference this acceptance letter in the cover letter to Revision 1 and resubmit 55 copies to the NRC.

Sincerely,

for C. J. Heltemes, Jr., Chief
Quality Assurance Branch
Division of Project Management

measures have been established, to be implemented by written procedures and instructions, which address each of the criteria of Appendix B and demonstrate conformance with each criterion.

Based on our review and evaluation of CE-1 dated June 1975 we conclude that:

1. The organizations and persons performing QA functions within Commonwealth Edison Company have the required independence and authority to effectively carry out the QA program without reservation or undue influence from those directly responsible for costs and schedules, and

2. The Commonwealth Edison Company QA program contains the necessary requirements, procedures, and controls to demonstrate that quality-related activities will be conducted in accordance with the requirements of Appendix B to 10 CFR Part 50.

REGULATORY POSITION

It is the staff's position that the Commonwealth Edison Company Quality Assurance Program for Nuclear Generating Stations (Topical Report CE-1, June 1975) is acceptable for use in the design, procurement, construction, and operation of nuclear power plants. The Topical Report can be referenced by report number in Section 17 of future Safety Analysis Reports.

TOPICAL REPORT EVALUATION

Report Number: CE-1, Nonproprietary
Report Title: Commonweal .. Edison Company Quality Assurance Program for Nuclear Generating Stations
Report Date: June, 1975
Originating Organization: Commonwealth Edison Company
Reviewed By: Quality Assurance Branch

SUMMARY OF TOPICAL REPORT

Topical Report CE-1, dated June 1975 describes the Quality Assurance (QA) Program which the Commonwealth Edison Company applies to those design, procurement, construction, and operation activities involving safety related structures, systems, and components of nuclear power plants within the Commonwealth Edison Company's scope of work. CE-1 dated June 1975 commits Commonwealth Edison Company to comply with the requirements of Appendix B to 10 CFR Part 50 and to follow the QA guidance provided by the NRC in:

1. "Guidance on Quality Assurance Requirements During Design and Procurement Phase of Nuclear Power Plants," WASH 1283, Rev. 1, May 24, 1974.

2. "Guidance on Quality Assurance Requirements During the Construction Phase of Nuclear Power Plants," WASH 1309, May 10, 1974.

3. "Guidance on Quality Assurance Requirements During the Operations Phase of Nuclear Power Plants," WASH 1284, October 26, 1973.

Commonwealth Edison Company has provided for our evaluation a detailed organizational description of those individuals and groups involved in carrying out activities required by the QA program and a delineation of duties, responsibilities, and authority of those organizational elements involved in the QA program. CE-1 dated June 1975 contains a description of the measures used to carry out the Commonwealth Edison Company's QA program activities and describes how applicable requirements of Appendix B will be satisfied by the administration and implementation of these measures.

SUMMARY OF REGULATORY EVALUATION

We have evaluated the QA program and the organizations responsible for QA functions as described in CE-1 dated June 1975. We find that QA policy and direction originate at an acceptably high management level and are effectively communicated to other parts of the organization. Those performing QA functions have responsibility and authority commensurate with their duties in implementing the QA program. We also find that

LISTING COVERING REVISION OF

TOPICAL REPORT CE-1

Listed below is Revision 12 dated 2/14/80 to the Commonwealth Edison Company Quality Assurance Program Topical Report CE-1:

Pages: 1-5, 1-6, 1-7, 1-8, 1-10, 1-21, 1-29, 1-31, 1-32, 1-33, 1-35, 1-36, 1-37, 18-3

Approved By: W J Shewski
Manager of Quality Assurance

2/14/80

LISTING COVERING REVISION OF

TOPICAL REPORT CE-1

Listed below is Revision 13 dated 4/4/80 to the Commonwealth Edison Company Quality Assurance Program Topical Report CE-1:

Pages: 1-5, 1-6, 1-8, 1-19, 1-29, 1-31
4-4

Approved By: W J Shewski
Manager of Quality Assurance

4/4/80

LISTING COVERING REVISION OF

TOPICAL REPORT CE-1

Listed below is Revision 10 dated 9/28/79 to the Commonwealth Edison Company Quality Assurance Program Topical Report CE-1:

Pages: 1-4, 1-5, 1-6, 1-7, 1-8, 1-10, 1-13, 1-21, 1-28, 1-29, 1-31, 1-32, 1-33, 1-35, 1-36, 1-37
2-7
4-4, 4-5
6-3
7-4
8-1, 8-2
13-3
18-1, 18-2

Approved By: W D Shewski
Manager of Quality Assurance

9/28/79

LISTING COVERING REVISION OF

TOPICAL REPORT CE-1

Listed below is Revision 11 dated 12/21/79 to the Commonwealth Edison Company Quality Assurance Program Topical Report CE-1:

Pages: 1-6, 1-7, 2-6, 2-7, 3-1, 3-3, 5-2, 6-1, 8-1, 10-1, 10-2, 12-1, 13-3

Approved By: W J Shewski
Manager of Quality Assurance

12/21/79

LISTING COVERING REVISION OF

TOPICAL REPORT CE-1

Listed below is Revision 9, dated 7/16/79, to the Commonwealth Edison Company Quality Assurance Program Topical Report CE-1:

Pages: 1-10, 1-11, 1-23, 1-24, 1-25, 1-26,
1-27, 1-28, 1-29, 1-30, 1-31, 1-37
3-3, 3-4
4-4
5-2
6-2
7-4, 7-5
8-1, 8-2
9-3
11-3, 11-4
12-2, 12-3
14-1
15-3
18-3

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Approved By: W J Shewski
Manager of Quality Assurance

7/16/79

LISTING COVERING REVISION OF

TOPICAL REPORT CE-1

Listed below is Revision 8 dated 6/21/79 to the Commonwealth Edison Company Quality Assurance Program Topical Report CE-1:

Pages: 1-4, 1-5, 1-8, 1-9, 1-10, 1-15, 1-19, 1-21, 1-26, 1-27, 1-28, 1-29, 1-30, 1-36
2-3, 2-6
3-2, 3-3
4-4
5-2
8-1, 8-2
9-3
15-2, 15-3
16-2

Addendum No. 1 for Zion - Pages 1-6

Table of Contents (2 pages)

Approved By: W J Shewoki
Manager of Quality Assurance

6/21/79

LISTING COVERING REVISION OF

TOPICAL REPORT CE-1

Listed below is Revision 7 dated 2/01/79, to the Commonwealth Edison Company Quality Assurance Program Topical Report CE-1:

Addendum No. 1 for Zion - Pages 1-7

Approved By: W J Shewski
Manager of Quality Assurance

2/01/79

LISTING COVERING REVISION OF

TOPICAL REPORT CE-1

Listed below is the revised page, Revision 6 dated 11/17/78, to the Commonwealth Edison Company, Quality Assurance Program, Topical Report CE-1:

Page: Abstract
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Approved By: W J Shewoski

Manager of Quality Assurance

11/17/78

LISTING COVERING REVISION OF

TOPICAL RFPORT CE-1

Listed below are the revised pages, Revision 5 dated 8/11/78, to the Commonwealth Edison Company, Quality Assurance Program, Topical Report CE-1:

Pages: 1-8, 1-12, 1-13, 1-19, 1-21,
1-24, 1-26, 1-27, 1-28, 1-30,
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Approved By: U J Stewart
Manager of Quality Assurance

8/11/78

LISTING COVERING REVISION OF

TOPICAL REPORT CE-1-A

Listed below are the revised pages, Revision 4 dated 3/10/78, to the Commonwealth Edison Company, Quality Assurance Program, Topical Report CE-1-A:

Pages: 1-23, 1-30, 1-31, 1-36, 2-1, 2-2, 2-6, 2-7, 4-4, 6-2, 9-3, 11-3, 12-1, 12-2, 12-3, 15-3, 18-2

Approved By: W. J. Shewski
Manager of Quality Assuran

March 10, 1978

LISTING COVERING REVISION OF

TOPICAL REPORT CE-1

Listed below are the revised pages, Revision 2 dated 10/25/77, to the Commonwealth Edison Company, Quality Assurance Program, Topical Report CE-1:

Pages: 1-1, 1-3, 1-9 through 1-14,
1-16, 1-17, 1-18, 1-19, 1-22,
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Approved By: W J Shewoski
Manager of Quality Assurance

10/25/77

LISTING COVERING REVISION OF

TOPICAL REPORT CE-1

Listed below are the revised pages, Revision 3 dated 12/15/77, to the Commonwealth Edison Company, Quality Assurance Program, Topical Report CE-1:

Pages: 1-6, 1-30, 1-31, 1-36,
2-4, 10-3, 17-2

Approved By: W J Stewart
Manager of Quality Assuranc

12/15/77

LISTING COVERING REVISION OF

TOPICAL REPORT CE-1

Following is listed the revised pages, Revision 1 dated 7/19/76, to the Commonwealth Edison Company, Quality Assurance Program, Topical Report CE-1:

Pages: 1-13 and 1-14
1-22 through 1-37
15-2 and 15-3

Approved By: W J Shewski
Manager of Quality Assurance

7/18/76

Commonwealth Edison Company
Chicago, Illinois

Topical Report CE-1-A

January 1976

Commonwealth Edison Company Quality Assurance Program for Nuclear Generating Stations

ABSTRACT

Commonwealth Edison's Quality Assurance Program which delineates the mandatory requirements and procedures that must be implemented and enforced in connection with its nuclear generating stations is described in this report. The report is divided into 18 sections, conforming in format to the 18 Criteria listed in Appendix B to 10CFR50. This document presents the Quality Assurance Program to be employed in the design, procurement, construction, modification, maintenance, in-service inspection and operating of safety-related systems, structures and components of the station. The execution of the Quality Assurance Program will assure Commonwealth Edison Company that the plant is built and operated to requirements and with the reliability necessary to safeguard the general public and Company employees. Overall responsibility for the Quality Assurance Program covering the design, construction and operation of the Company's nuclear generating stations is assigned to the President and authority and responsibility for directing and administering the Program is assigned to the Manager of Quality Assurance by the Chairman and President of Commonwealth Edison Company. The scope of this Report covers the total Quality Assurance Program for the life of Commonwealth Edison Company nuclear generating plants commencing with the LaSalle County Station and for the operation period of Dresden, Quad Cities and Zion plants.

Rev. 6
11/17/78
Commonwealth Edison

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QUALITY ASSURANCE DURING DESIGN, CONSTRUCTION AND OPERATION

Introduction

This Topical Report has been prepared to delineate the requirements governing the Commonwealth Edison Company Quality Assurance Program for its nuclear generating stations. Implementation of the Program with Quality Procedures provides the degree of quality assurance commensurate with the requirements of ASME Section III, Division 1 and Division 2 for concrete containment and other applicable codes, Nuclear Regulatory Commission requirements and Federal Regulations governing design, procurement, construction, testing, operation, refueling, maintenance, repair and modification of Commonwealth Edison Company's nuclear power generating facilities. The scope of this Report covers the total Quality Assurance Program for the life of the Commonwealth Edison Company generating plants commencing with the construction of the LaSalle County Station and for the operation periods of the Dresden, Quad Cities and Zion plants and is described in the ensuing 18 sections of this Report. | 2

1. Organization

A. Basic Organization Responsibilities

Commonwealth Edison Company is ultimately responsible for the assurance of quality in all phases of the design, procurement, construction, modification, testing and operation of the Station. Edison executes this responsibility in accordance with the program set forth in the Company Quality Assurance Manual and described herein and assigns areas of ultimate responsibility to specific Edison organizations and individuals. Edison has delegated the responsibility for certain phases of the work to the Architect Engineer and the NSSS Supplier, both of whom act as Edison's agents in the assigned areas. Edison maintains overall control of the efforts of these organizations by various mechanisms such as design evaluation and audits. Edison has prime responsibility for controlling the quality of on-site work by field contractors. Also, Edison retains overall responsibility for procurement, design, construction, modifications, and operation of the plant including certification and stamping in accordance with the ASME Code. | 2

The Commonwealth Edison Company Quality Assurance Program for Nuclear Generating Stations covers the organization arrangement whereby the Quality Assurance Department is a separate and independent organization. The Station Construction Department Site Project Superintendent supported by Field Engineers is responsible for administration of the contracts and verification that construction activities carried out by site contractors conform to procurement document requirements which include performance and quality related functions. Also, the Station Construction Department site group has responsibility for reviewing site contractor quality control procedures, preparing checklists for witnessing inspection notification points at vendor plants, inspection and designation of status of incoming material at the site, reviewing inspection procedures and monitoring quality control activities of contractors at the site.

The Quality Assurance site group is responsible for assuring that the quality requirements are fulfilled and for final approval of: (1) quality assurance procedures of site contractors; (2) the program, including checklists and reports, for witness inspection and audits at contractor plants; (3) site receipt inspection of materials performed by others; and (4) for audit of contractor inspection activities at the site. Independent Inspection Agency activities performed directly for Commonwealth Edison are under the direction and responsibility of the Quality Assurance Supervisor or Coordinator and such Agency shall be staffed with qualified personnel acceptable to Quality Assurance. Such Agency has responsibility to identify unacceptable or nonconforming work occurring on-site and, when assigned, at off-site supplier's plants. An Independent Inspection Agency is assigned responsibilities for inspection and testing, to determine and report whether the item conforms to design, test and specification requirements and to reject unsatisfactory materials, equipment and other items. Such rejection by an Independent Inspection Agency will be the basis for action by the Commonwealth Edison site organizations to carry out necessary steps to assure repair, rework or processing of a nonconformance report in accordance with the Quality Assurance Program.

The Commonwealth Edison Company Quality Assurance Program includes the quality assurance requirements for operating nuclear power stations. The Program covering operations shall comply with the 18 Criteria of the "Quality Assurance Criteria for Nuclear Power Plants" of Appendix B to 10CFR50 for maintenance, modification and refueling activities and with Criteria 1, 2, 5, 6, 10, 11, 13, 14, 15, 16, 17 and 18 for operating activities. As supplementary Criteria to the 18 Criteria described above for Appendix B to 10CFR50, the Program also complies with Regulatory Guide 1.33 "Quality Assurance Program Requirements (Operations)" as an acceptable method of complying

with the Commission's regulations with regard to overall quality assurance program requirements. The Program shall apply to the quality assurance activities affecting the safety-related structures, systems and components. The Program is applicable to the maintenance, modification, operating and refueling quality assurance activities from the time the Operating License is issued to the end of the operating life of the items. Repairs are performed as maintenance activities and alterations as modifications. The Program covering operations, including quality control, are planned and implemented in accordance with procedures necessary to provide Commonwealth Edison Company adequate confidence that a safety-related structure, system or component performs satisfactorily in service.

B. Organizational Responsibilities for Major Activities

Design

Control of design quality is essentially a four-stage process. Designs originated by either the NSSS Supplier or Architect Engineer are subjected to internal review by the designer and an independent internal party (or parties). The NSSS Supplier and Architect Engineer designs are evaluated by each other as well as by personnel from one or more Edison departments. These steps constitute the primary design evaluation for all safety-related and ASME Section III items in the Station. Appropriate document distribution and control has been established to permit an effective effort in this area. Comments on designs resulting from these evaluations are presented in letter form, by telephone (with written follow-up) or in meetings with published minutes. Edison has final authority with respect to decision making on designs. | 2

Procurement

Procurement control and follow-up for NSSS components is established and maintained by the NSSS Supplier. Edison and the Architect Engineer evaluate the NSSS Supplier procurement specifications, and Edison audits and inspects the NSSS Supplier control measures. Procurement of and follow-up on non-NSSS components and services are directly controlled by Edison, based on the Architect Engineer specifications which have been evaluated by Edison. The Architect Engineer is used to assist in this effort, as Edison's agent, as requested by Edison.

Construction

Construction quality assurance is an Edison responsibility. Edison exercises managerial control of all site construction activities. The site Quality Assurance Group maintains close surveillance of on-site contractor's and other

associated construction quality assurance activities. The NSSS Supplier furnishes technical and Quality Control assistance for on-site activities relating to the NSSS. On-site contractors' quality assurance programs are independently evaluated by the Architect Engineer and Edison Quality Assurance.

Pre-service Testing

Pre-service testing, consisting of preoperational and start-up testing, is controlled by Edison. The Architect Engineer and the NSSS Supplier furnish rough draft test procedures to Edison. Based on these, a final draft is written by Edison. This final draft is subjected to internal Edison evaluation and evaluation by the Architect Engineer or the NSSS Supplier as appropriate. The tests are managed and performed by Edison with technical assistance from the NSSS Supplier as appropriate. The evaluation of the test results is performed by Edison and confirmed by independent internal Edison evaluations. Further independent evaluations by the Architect Engineer or the NSSS Supplier are performed as required by Edison.

Operations

Commonwealth's managerial and administrative control of the Quality Assurance Program for operating nuclear stations, as illustrated in Figures 1-0, 1-1, and 1-6, includes review and approval of procedures by the personnel described in this document.

Quality Procedures and revisions thereto for the Company Manual are concurred with by the principally involved departments. The Director of Quality Assurance (Operating) reporting to the Manager of Quality Assurance, verifies that the Quality Procedures for Operating contained in the Company Manual or Station Quality Procedures comply with the policy described in this document. Similarly, the Quality Assurance Supervisor (Maintenance) verifies that the Quality Procedures for maintenance, modifications, in-service inspection and Stores activities comply. The Manager of Quality Assurance directs the quality assurance activities covering operations and approves the Quality Assurance Procedures covering operating, maintenance, modifications, in-service inspection and Stores activities for use in the Station. 10

Station Procedures and instructions and revisions thereto for the Station Procedures Manual are reviewed and approved as provided in the Technical Specifications. The station Quality Assurance Engineer or Inspector, reporting to the Director of Quality Assurance (Operating) provides

surveillance of the preparation and revision of the station operating procedures and instructions to assure compliance with the policies contained in the Quality Assurance Program. The Quality Assurance Engineers or Inspectors for maintenance, reporting to the Quality Assurance Supervisor (Maintenance), provide surveillance of the preparation and revision of procedures and instructions for maintenance, modifications, in-service inspections and Stores activities to assure compliance with the policy contained in the Quality Assurance Program. Temporary changes to procedures which do not change the intent of the original procedures, may be made with the concurrence of qualified individuals as described by Technical Specifications. Such temporary changes are subsequently reviewed, approved and authorized in a manner commensurate to that used for the original procedure.

Managerial and Administrative Controls

Lines of authority and responsibility for the Quality Assurance Program are documented and updated, as appropriate, in the form of organizational charts, functional descriptions of departmental responsibilities or descriptions of key quality assurance positions including those providing technical support or audit responsibility.

In general, the Quality Assurance Program provides that an activity is verified as being correctly performed, that Quality Assurance activities are performed independent of the individual or group directly responsible for performing a specific activity, and that quality assurance functions have sufficient authority and organizational freedom to identify quality problems; to initiate, recommend, or provide solutions; and to verify implementation of the solutions.

The responsibilities for implementation of the Quality Assurance Program are assigned to the Vice Chairman, Executive Vice Presidents, Vice President (Engineering), Vice President of Nuclear Operations, Manager of Station Construction, Vice President (Purchasing), Vice President (Divisions) and Manager of Quality Assurance. The organizations or personnel named here herein and reporting to the Vice President (Engineering), Vice President of Nuclear Operations, Manager of Station Construction, the Vice President (Purchasing) and Manager of Quality Assurance may assign to other organizations or personnel, the work of establishing and executing any part of the Quality Assurance Program under their cognizance, but the assigning organizations or personnel retain responsibility for such assignments. Figures 1-0, 1-1 and 1-6 illustrate the functional and administrative responsibilities of the major organizations and personnel participating in the Quality Assurance Program for operating nuclear stations. Dashed lines represent the functional responsibility for establishing and administrating the procedures and instructions. Solid lines represent responsibility for

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implementing the procedures and instructions. Dotted lines represent audit responsibility for verifying compliance with the procedures and instructions independent of the person or group directly responsible for performing the activities.

The specific responsibilities for the Quality Assurance Program are described in the following paragraphs.

1.1 General

As assigned in the policy statement for the Corporate Quality Assurance Manual by the Chairman and President, the Vice Chairman of Commonwealth Edison Company has overall responsibility for the Quality Assurance Program covering the design, construction and operation of the Company's nuclear generating stations. Similarly assigned, authority and responsibility is assigned to the Manager of Quality Assurance for quality assurance with respect to design, procurement, construction and operation of the Company's nuclear power stations. Further, other authorities and responsibilities are as delineated in the organization section.

The Executive Vice Presidents, Vice President (Engineering); Manager of Quality Assurance; Vice President of Nuclear Operations; Vice President (Divisions); Manager of Station Construction and Vice President (Purchasing) are responsible for implementation of the Quality Assurance Programs as described herein. 13

The Vice President of Nuclear Operations directs the activities of the Station Nuclear Engineering Department. The Station Nuclear Engineering Manager is responsible for design, test procedure, plant modifications and the baseline data for future in-service inspection for the Commonwealth Edison Company (CECo) nuclear power generating stations. The Vice President (Engineering) directs the testing activities of the Operational Analysis Department with the Operational Analysis Manager being responsible.

The Manager of Quality Assurance directs the quality assurance activities for the design, procurement, construction and operation of the Company's nuclear power facilities and interface activities with the Nuclear Regulatory Commission, Office of Inspection and Enforcement, Region III and the Authorized Inspection Agency. He or his designated alternate has been delegated responsibility and authority to stop unsatisfactory work and plant operation as well as further processing of unsatisfactory material during design, engineering and construction of the plant, and during plant modification, maintenance and in-service inspection.

If conditions, which are adverse to quality and which require prompt action are found by Quality personnel at the site or Station and required corrective measures can not be agreed upon, the Manager of Quality Assurance or his designated alternate, will be notified promptly.

The Director of Quality Assurance (Engineering-Construction), the Director of Quality Assurance (Operating) and the Quality Assurance Supervisor (Maintenance) report directly to the Manager of Quality Assurance. The Director of Quality Assurance (Engineering-Construction) has responsibility for administering design, procurement and construction quality assurance activities; the Director of Quality Assurance (Operating) has responsibility for administering operating quality assurance activities; and Quality Assurance Supervisor (Maintenance) has responsibility for quality assurance activities covering maintenance, modification, in-service inspection and Stores activities. They have authority and organizational freedom to identify problems and to initiate, recommend or provide solutions. The Quality Assurance organization is independent of the groups and individuals directly responsible for performing specific activities to which such quality assurance is applicable.

The qualification requirements for the position of Manager of Quality Assurance includes having a broad background and working knowledge of nuclear plant engineering, construction and operating activities within Commonwealth Edison Company as well as functional interfaces with working organizations outside the company plus having executive capabilities to achieve goals and objectives in concert with company policies. Also required is knowledge of Quality Assurance regulations, policies, practices and Standards and experience working in Quality Assurance or related activity in reactor design, construction or operation or in a similar high technology industry. Educational requirements include, as a minimum, a baccalaureate degree or equivalent in Engineering or related science. "Equivalent" is considered to be commensurate with the factors described in paragraph 4.1 (items a-j) of ANS-3.1-1979. The Manager of Quality Assurance shall have (4) years experience in the field of quality assurance, or equivalent number of years of nuclear plant experience in a supervisory position preferably at an operating nuclear plant or a combination of the two. At least one (1) year of this four years experience shall include detailed involvement in the administration of and adherence to the Quality Assurance Program in a significant technical management responsibility directly involving nuclear power plants, such as engineering, construction, operation, etc. 12

Job requirements for the positions of the Directors of Quality Assurance and Quality Assurance Supervisor (Maintenance) include having a broad background and working knowledge of engineering, construction and operating activities within Commonwealth Edison Company as well as having a knowledge of codes and standards applicable to power plant design, construction and operation and quality assurance principles. They also shall have supervisor and management qualities and capabilities. Educational requirements shall include a baccalaureate degree or equivalent in engineering or an equivalent technical discipline.

The Executive Vice President for Construction, Production and Engineering directs the activities of departments responsible for licensing, construction, construction testing, plant operations, nuclear and other engineering and environmental affairs. 12

In this capacity he is responsible for the activities of departments and divisions concerned with the operations, maintenance and nuclear engineering of the Company's generating facilities as well as control over the bulk power transmission system. The departments and divisions and the person responsible for activity within each are as follows:

Production Services Department -
Manager Production Services

System Power Supply Department -
System Power Supply Manager

Production, Fossil Division -
Division Manager-Fossil Stations

Station Construction Department -
Manager of Station Construction

Station Nuclear Engineering, Environmental Affairs, Nuclear Licensing and Nuclear Fuel Services Departments, and Production Nuclear Division -
Vice President of Nuclear Operations

Operational Analysis and other Engineering Departments -
Vice President (Engineering)

The Vice President (Divisions) is responsible for the activities of the seven Operating Divisions and the Operating Manager. These Divisions are assigned responsibility for those activities concerned with distribution of power as well as service to customers and public relations within their respective geographical areas including operation and maintenance and inspection of electrical transmission and distribution facilities. The Operating Manager's responsibility includes the Transmission and Distribution Construction Department which has functional responsibility and control for Division Substation Construction activities.

A division Vice President is responsibile for each Division. A Division Operating Manager reports to the Division Vice President. The Division Operating Manager is responsible for Division Substation Construction and Division Operational Analysis activities.

Commonwealth Edison assigns to the Vice President (Purchasing) the responsibility for the procurement of: services, spare parts, materials and equipment in accordance with the purchase requisition and contract requirements and for obtaining the required quality assurance documentation for such items. Corresponding responsibility for the procurement of nuclear fuel (including reprocessing) is assigned to the Vice President (Fuels & Budgets).

1.2 Organization

The Commonwealth Edison Company organization, as related to Quality Assurance, is shown in Figures 1-0 and 1-1. Departmental and divisional organizations showing the Quality Assurance function is shown in Figures 1-2, 1-2.1, 1-3 and 1-5.

1.3 Scope

Specific responsibilities for implementation of the Quality Assurance Program are assigned to the Commonwealth Edison Company organizational groups as outlined in Paragraphs 1.4 through 1.6.

The scope of responsibilities involved in a nuclear project is divided into four Phases.

Phase I - Definitions of system design and quality requirements and acceptance of the quality of design.

Phase II - Verification that design and quality requirements have been met during construction.

Phase III - Baseline in-service inspection; preoperational testing.

Phase IV - Operation, in-service inspection, maintenance, repair, refueling and station modifications.

1.4 Engineering and Construction Responsibilities

1.4.1 Station Nuclear Engineering Department

The Station Nuclear Engineering Department is organized as shown in Figure 1-3. This department is responsible for Phases I and II and assists other departments for all Phases.

1.4.1.1 For Phases I and II, the Station Nuclear Engineering Department delegates and also coordinates various segments of these activities with the Station Construction Department, Nuclear Licensing Department, Operational Analysis Department and Production, Nuclear Division. For

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Phase IV, Station modifications design activity, the Station Nuclear Engineering Department has responsibility for design and schedules and for obtaining assistance from the Production Nuclear Division.

1.4.1.2 **The Station Nuclear Engineering Manager reports to the Vice President of Nuclear Operations. He assigns specific nuclear generating station and project responsibility to Section Engineers. The Section Engineers have overall engineering responsibility for** such projects and, specifically, supervises the electrical, mechanical, structural and nuclear activities during plant design and construction and of modifications during plant operation. A Project Engineer assigned to the Section Engineer for a nuclear generating station or each project, directs and coordinates the associated activities during design, construction, and as requested, during subsequent station modifications and maintenance. The Project Engineer is responsible to the Section Engineer for the following responsibilities:

a. Review and control the scope of work involving the electrical, mechanical, structural and instrumentation, and control designs of the NSSS vendor and Architect Engineer to verify that applicable Safety Analysis Report (SAR), regulatory requirements and design bases are properly translated into specifications, drawings, procedures and instructions.

b. Review and accept the specifications, drawings, and scope for electrical, mechanical and structural material, equipment and erection work, prepared by the Architect Engineer and NSSS vendor, to verify inclusion of inspection, testing and acceptance criteria.

c. Analyze bids, make purchase recommendations, control expenditures and assure that necessary quality requirements are included in purchase orders and contracts.

d. Disposition of electrical, mechanical and structural design changes.

e. Review the Architect Engineer's evaluation of fabricator's and erector's detailed designs, drawings and work instructions for reasonableness and completeness.

f. Review and approve resolution of nonconformances relating to electrical, mechanical and structural portions of the generating station.

g. Establish the plans for the preoperational and start-up test programs.

h. Coordinate the preparation and review of preoperational and start-up test procedures.

i. Coordinate the evaluation of the adequacy of the results of the preoperational and start-up testing. Make recommendation for acceptance of test results when results are judged satisfactory.

j. Develop overall schedules.

The Station Nuclear Engineering Manager is assigned both the Owner's responsibilities and overall responsibilities, including stamping, an N-Certificate Holder for ASME Section III, Division 1 and Division 2, covering concrete containment. 9

1.4.1.3 The Quality Assurance Coordinator assigned to Station Nuclear Engineering Department has the responsibility to assure that the following quality assurance activities are performed. (Also see 1.4.5.1.A)

a. Development of quality procedures to be used by Station Nuclear Engineering in the Commonwealth Edison Quality Assurance Program.

b. Evaluation of contractors' quality assurance programs.

c. Acceptance of only acceptable contractors' quality assurance programs.

d. Audits of the design review system of Architect Engineer and NSSS vendor.

e. Audits of construction site activities.

f. Audits of off-site contractors, as necessary, or requested.

g. Purchase documents (i.e., specifications, drawings, procedures and instructions) are reviewed for assurance of the inclusion of Quality Assurance Requirements.

1.4.1.4 The Architect Engineer is responsible to the Station Nuclear Engineering Department for the mechanical, structural and electrical design of the plant and for the quality of that design (except for those portions of that design included within the scope of the Nuclear Steam Supply System (NSSS)). In this context, the Architect Engineer performs an independent evaluation of vendor proposals, designs, quality assurance programs, test reports and design reports. The Architect Engineer further performs an independent evaluation of the NSSS design. The Architect Engineer is responsible for the document distribution for all phases of the job.

1.4.2 Station Electrical Engineering Department

The Station Electrical Engineering Department will provide electrical engineering technical assistance to the Station Nuclear Engineering Department, as requested, or assigned by the Station Nuclear Engineering Department.

1.4.3 Station Construction Department

The Station Construction Department is organized with a Manager, Technical Staff, Project Superintendent and Field Engineers as shown in Figure 1. The respective Site Field Engineer groups generally are headed by a supervising or lead type individual depending on the status and requirements of the project who, in turn, carries out the responsibilities of, and reports to the Project Superintendent or Engineer. (A Supervisor of Quality Assurance or Site Quality Assurance Coordinator is assigned to each construction site independent of the Station Construction Department for Phase II.)

1.4.4.1 The Operational Analysis Manager has the following responsibilities:

a. Participate in review of design specifications to verify proper selection of materials and the inclusion of adequate electrical testing requirements.

b. Prepare procedures and conduct electrical construction tests as directed.

c. Participate in the preparation and review of preoperational and start-up test procedures, as directed.

d. Participate in and coordinate preoperational and start-up testing, as directed.

e. Maintain SNT-TC-1A Level III person on Staff responsible for personnel and procedure development and qualification to Code requirements for nondestructive examination.

f. Maintain Commonwealth Edison Company off-site testing facilities and equipment required to fulfill the Department responsibilities.

g. Provide necessary assistance and expertise for baseline and in-service inspection.

h. Provide specialized testing services and equipment analysis such as instrument and equipment calibrations (traceable to national standards) and evaluation of materials.

1.4.4.2 The Operational Analysis Department provides specialized field testing services through its technical staff specialists, standardizing and calibration services, retention of related quality assurance documentation and materials expertise. Also, the Department is responsible for inspection and proof testing of electrical generation, transmission and distribution equipment. The Company Level III NDE person is assigned to this Department.

1.4.4.3 The Quality Assurance Coordinator assigned to the Operational Analysis Department has the responsibility to assure that the following quality assurance activities are performed:

1.4.3.1 The Manager of Station Construction assigns a Project Superintendent or Engineer to a construction site or Station who has the following responsibilities: 10

a. Advisor to engineering departments for design suitability from a construction viewpoint.

b. Coordinate requests for field revisions.

c. Receipt of items including furnishing necessary storage facilities.

d. Assist Station Nuclear Engineering Department in development of overall schedule.

e. Verify conformance and completeness of contractor's installation or erection to specification requirements.

f. Supervise and approve mechanical and structural construction tests.

g. Coordinate and provide assistance for electrical construction tests.

h. Coordinate preoperational tests.

The Manager of Station Construction is assigned ASME Section III, Division Constructor responsibilities and has the responsibility for maintaining a Level III person on Staff responsible for personnel development and qualification and for the performance to the requirements for concrete inspection as required by rules established in Section III, Division 2 of the ASME Code.

1.4.3.2 The Station Construction Project Superintendent or Engineer is responsible for coordinating and directing Phase II of the Program, activities to assure procurement requirements are fulfilled by suppliers and construction at the site. The Station Construction Department receives assistance from the Station Nuclear Engineering, Station Electrical Engineering and Operational Analysis Departments. The Station Construction Department provides construction assistance and expertise to the total program including plant modifications under Phase IV.

1.4.4 Operational Analysis Department

The Operational Analysis Department is organized as shown in Figure 1-5.

a. Calibration is performed on test and measurement equipment as required.

b. Auditing is performed of destructive and nondestructive testing as directed.

c. Fabricator and erector work instructions are reviewed for inclusion of nondestructive and electrical testing requirements.

d. Results of electrical construction tests are reviewed.

e. Nondestructive test personnel qualifications records are maintained.

1.4.5 Director of Quality Assurance (Engineering-Construction)

The Director of Quality Assurance (Engineering-Construction) reports to the Manager of Quality Assurance and is responsible for administration of the Commonwealth Edison Company Quality Assurance Requirements and Procedures established for the design and construction phase of nuclear power generating stations. Specifically, he will direct the efforts of the Supervisors of Quality Assurance, Site Quality Assurance Coordinators and each Quality Assurance Coordinator assigned to the Station Nuclear Engineering and Operational Analysis Departments. He maintains a cognizance of the Operations portion of the Quality Assurance Program to determine that it interfaces with the design and construction quality assurance phases. He shall serve as liaison with quality assurance organizations of the NSSS Vendor, Architect Engineer, Authorized Inspector and Contractors - as necessary - to verify that compliance with the applicable Codes, Standards and Regulations are met. This Director of Quality Assurance will regularly inform the Manager of Quality Assurance of significant quality assurance development and problem areas. The Director of Quality Assurance (Engineering-Construction) has sufficient authority to identify problem areas and require corrective action. 8

1.4.5.1 Supervisor of Quality Assurance or Quality Assurance Coordinator (Engineering-Construction)

Each Supervisor of Quality Assurance or Quality Assurance Coordinator reports to the Director of Quality Assurance (Engineering-Construction) and is responsible for the quality activities within his specific department. He is responsible to observe and inform the Director of Quality Assurance (Engineering-Construction) of any deficiency involving required Safety Analysis Reports, Quality Assurance Manual Reports, design reports, construction reports and test reports.

The Supervisor of Quality Assurance or a Quality Assurance Coordinator is responsible for reviews and audits to assure that the above requirements are met and that nonconformances are resolved.

A. Engineering - In addition to the responsibilities stated herein, under Section 1.4.1.3, the Quality Assurance Coordinator assigned to the Station Nuclear Engineering Department is responsible for surveillance audit of Engineering activities involving construction projects and operating nuclear plants for conformance to requirements. He maintains surveillance of required documentation of modifications activities at operating stations where Station Nuclear Engineering Department responsibility is involved. His responsbilities are achieved through project review, surveillance and day-to-day involvement plus by support, involvement and action of the Director of Quality Assurance (Engineering-Construction) and, in turn, the Manager of Quality Assurance. 2

B. Operational Analysis - The Quality Assurance Coordinator assigned to the Operational Analysis Department is responsible for assuring that calibration procedures and records are maintained for Nuclear Station Test and Measurement equipment. He also maintains surveillance

c. Advise the Engineering Department of Bidder Quality Assurance capabilities when requested.

d. Maintain surveillance of site contractors to verify conformance to approved quality control programs and procedures by review, surveillance and audits.

e. Assure accumulation, filing and maintenance of quality assurance documents and records required for site construction by surveillance and audit.

f. Review and acceptance of nondestructive test documentation.

g. Identification and maintenance of files for site nonconforming items and follow-up and monitor of corrective action required for disposition of site nonconformances.

h. Maintenance of calibration records for test equipment involved in site construction activities through surveillance and audit.

i. Safekeeping of quality assurance documentation during construction by surveillance.

j. Surveillance and approval by Quality Assurance of material receiving reports including assurance required corrective actions are completed.

k. Review by Quality Assurance of on-site contractor surveillance reports for quality problems and completion of corrective actions.

l. Quality Assurance audit of on-site contractors.

m. Review and approval of site procurement packages involving safety-related and ASME Code purchases to assure necessary requirements are provided and the proposed vendor(s) is acceptable.

of required documentation of the testing and inspection activities related to the Operational Analysis Department. His responsibilities are achieved essentially in the same manner as stated for the Quality Assurance Coordinator assigned to Engineering.

C. Construction Site - The Site Quality Assurance Group will vary with the volume of quality oriented activity at the site. Generally, the number will vary from one to ten or more; although, in the pre-construction and early stages of construction, the Site Quality Assurance Coordinator or Engineer may perform these activities alone.

The Supervisor of Quality Assurance or Site Quality Assurance Coordinator is responsible for assuring necessary procurement requirements are provided in CECo site procurement packages involving safety-related and ASME Code purchases, off-site vendor inspections and surveillances, surveillance of site contractor quality activities, compliance of material and equipment with procurement document requirements, maintenance of quality records filed at the site and direction of the site quality assurance group activities. These responsibilities will be achieved using Quality Assurance Engineers or Inspectors through review, surveillance and audit activities, continued monitoring and day-to-day involvement. 2

The Supervisor of Quality Assurance or Site Quality Assurance Coordinator has the responsibility that the following quality assurance activities are performed:

a. Development and approval of site contractor construction quality control procedures.

b. Review and approval of site contractor quality assurance programs including site procedures.

1.4.6 Director of Quality Assurance (Operating)

The Director of Quality Assurance (Operating) reports to the Manager of Quality Assurance and is responsible for administration of the Commonwealth Edison Company Quality Assurance Requirements and Procedures established for the operating phase of nuclear power generating stations. Specifically, he will direct the effort of the Quality Assurance Engineers or Inspectors covering quality assurance for operating activities. This Director of Quality Assurance will regularly inform the Manager of Quality Assurance of significant quality assurance development and problem areas. He will also inform the Divison Manager Nuclear Stations, Director Nuclear Fuel Services and, where applicable, the Vice President (Fuel & Budgets) of significant quality assurance questions and problems related to fuel fabrication. The Director of Quality Assurance (Operating) has sufficient authority to identify problem areas and require corrective action. 13

1.4.6.1 Quality Assurance Engineer or Inspector (Operating)

The Quality Assurance Engineer or Inspector for operating assigned to a station reports to the Director of Quality Assurance (Operating) and has authority and responsibility for the surveillance and audit of:

a. The preparation and revision of the station procedures for administration and operations.

b. Implementation of the Operations portion of the Quality Assurance program.

c. The completion of documentation showing that the required inspections and tests were performed.

d. The completion of reported corrective action.

e. The incorporation of approved engineering changes into station operating procedures.

1.4.6.2 Nuclear Fuel Fabrication Inspector

The Nuclear Fuel Fabrication Inspector has the responsibility for surveillance of fuel fabrication at vendor's plant. He reports to the Director of Quality Assurance (Operating).

1.4.7 Quality Assurance Engineer or Inspector for Modification and Maintenance

The Quality Assurance Engineer or Inspector for maintenance and modification, assigned to a station, reports to the Staff Assistant, who, in turn, reports to the Manager of Quality Assurance on quality assurance activities involving modifications, maintenance, in-service inspection and Stores activities for operating nuclear power stations. Each Quality Assurance Engineer or Inspector has authority and responsibility for surveillance and audit of:

a. Implementation of the modification and maintenance portion of the Quality Assurance Program.

b. The preparation and revision of the Station Procedures for the modification and maintenance.

c. The completion of documentation showing that the required inspections and tests were performed for modification, maintenance and material receipts. He shall also review and approve receiving inspection documentation.

d. The proper and satisfactory completion of modification, maintenance and reported corrective action. He shall also review and approve such completion and corrective action.

e. The incorporation of approved engineering changes into maintenance and operating procedures.

f. Completion of ASME Code requirements.

g. In-service inspection and Stores activities.

h. Adherence to Technical Specification requirements where involved with modification, maintenance and in-service inspection activities.

1.5 Production Department Responsibilities

1.5.1 Production - Nuclear Division

1.5.1.1 Division Manager - Nuclear Stations

The Commonwealth Edison Company production stations are divided into two

Production Divisions - Fossil and Nuclear. The Division Manager in charge of each Division is responsible for the safe and reliable operation and maintenance of the plant assigned to his division.

The Division Manager-Nuclear Stations reports to the Vice President of Nuclear Operations and has line responsibility for the administration, management and direction of all Production Department activities at nuclear stations. He is responsible for implementation of the Quality Procedures for the Quality Assurance Program and for development of station procedures for the Station Procedures Manual. 12

He is also responsible for obtaining and authorizing the use of services, or required liaison or interface with, other Commonwealth Edison Company departments such as: Accounting, Industrial and Public Relations, Purchasing, Engineering, Construction and Operational Analysis. He is responsible for approval of requisitions for the procurement of services from vendors and contractors. He provides liaison between the Regional Nuclear Regulatory Commission's Director of the Office of Inspection and Enforcement and the Office of the Production Department.

He is responsible, through the Station Superintendent, for the management of each assigned power station. This includes all activities such as, operation, maintenance and refueling, and authorization of modifications performed at the Station, compliance with all regulations and licenses, personnel selections, training and related activities. He assigns responsibility for preparation and implementation of the Station Procedures Manual to the Station Superintendent including the Maintenance Procedures.

The Division Manager-Nuclear Stations coordinates the planning of each assigned station's activities with the activities of other plants on the Commonwealth Edison Company system and with the System Power Supply Manager. The

coordinated planning involves scheduled outages, system electrical demands and Commonwealth Edison Company policy and rules. He maintains contacts with similar nuclear stations of other companies and transmits information from them regarding operating problems to Commonwealth Edison's nuclear stations.

1.5.1.2 Station Superintendent

Each nuclear generating station is managed by a Station Superintendent who is responsible for direct management of the station including industrial relations, planning, coordination, direction of the operation, maintenance, refueling and technical activities. The Station Superintendent is responsible for Phase III and IV and compliance with the Station's NRC Operating License, government regulations, ASME Code requirements and the Company Quality Assurance Program. He also authorizes the use of procedures contained in the Station Procedure Manual, and is responsible for final approval and distribution of station reports. The Station Superintendent authorizes all modifications to the Station after the issuance of an Operating License and completion of preoperational testing. He forwards requests for modifications to the Commonwealth Station Nuclear Engineering Department. Repair and equipment maintenance needing technical review for substitution of equipment are reviewed by the Station Technical Staff and completed as maintenance activities under station management. He supervises the Station's on-site review function as provided in the Administrative Section 6.0 of the Technical Specifications.

During periods when the Station Superintendent is unavailable, he shall designate this responsibility to an established alternate who satisfies the ANSI N18.1 experience requirements for plant manager.

1.5.1.3 Operating Assistant Superintendent

Responsibility for the day-to-day operating and refueling activities for the Station is delegated to the Operating Assistant Superintendent. Reporting to him are the Station Operating Engineers and Shift Engineers.

1.5.1.3.1 Operating Engineers

The Operating Engineers are responsible for the operation of the mechanical and electrical equipment and certain common plant systems, such as fuel handling and radioactive waste processing, assigned to them by the Operating Assistant Superintendent. They are responsible for recommending maintenance for such equipment and for authorizing functional acceptance tests to be conducted by Operating and Technical Staff personnel.

1.5.1.3.2 Shift Engineer 9

The Shift Engineer on duty is responsible for operating the plant in compliance with the station Operating License and the Station Operating Procedures. During his shift, the Shift Engineer is in charge of the entire plant operation and is responsible for the plant being operated in a safe and reliable condition. He receives direction from the Operating Assistant Superintendent.

1.5.1.4 Administrative and Support Service Assistant Superintendent

The Administrative and Support Services Assistant Superintendent reports to the Superintendent and performs various administrative duties and support services as

assigned. Reporting to him are: (1) Technical Staff Supervisor, (2) Office Supervisor, (3) Station Security Administrator, and (4) Quality Control Supervisor.

1.5.1.4.1 Technical Staff Supervisor

The Technical Staff Supervisor provides technical support for plant operations, refueling, maintenance, modifications and in-service inspection and evaluates process data and equipment performance and adequacy of station procedures. He makes recommendations and advises the Assistant Superintendent with respect to quality assurance. He has the responsibilities and authority as described in Section 6.0 of the Technical Specifications for implementation of the onsite review function. He is also responsibile for the following:

a. Witnessing of assigned testing for verifying completion of modifications and equipment maintenance.

b. Verification of incorporation of approved engineering changes into station maintenance and operating procedures.

c. Verification of completion of reported corrective action.

d. Quality requirements for maintenance and Stores receipt inspection.

1.5.1.4.2 Quality Control Supervisor

The Station Quality Control Supervisor reports to the Administrative and Support Services Assistant Superintendent and is responsible for the quality control activities at the Station such as: reviewing drawings, specifications, Maintenance/Modification Procedures and requests

work, providing on-the-job training of instrument personnel, setting up instruments for tests, maintaining listing of calibrated instruments, arranging for the instrument maintenance work and its inspection to be performed and initiating requisitions for the procurement of instruments and parts from vendors and services from contractors. The Master Instrument Mechanic reports to the Maintenance Assistant Superintendent.

1.5.1.6 Personnel Administrator

The Personnel Administrator reports to the Superintendent and performs various personnel activities as assigned. Reporting to him is the Training Supervisor.

1.5.1.6.1 Training Supervisor

The Training Supervisor is responsible for the training and retraining of operating and maintenance personnel. His responsibility includes planning, scheduling, preparing, presenting and documenting completion of training courses.

1.5.2 Maintenance Manager - Nuclear Stations

The Maintenance Manager's Staff is shown in Figure 1-6. The Maintenance Manager reports to the Division Manager Nuclear Stations and is responsible for functional direction of maintenance activities at nuclear stations including In-Service Inspection activities, special tool and equipment development, equipment and refueling outage schedules and contractor and vendor activities. He is responsible for providing direction to the Maintenance Assistant Superintendent regarding day-to-day maintenance operations, forced outages, scheduled outages and refueling operations plus an effective maintenance program for ALARA radiation exposures.

for purchase for inclusion of applicable quality requirements; performing receiving inspection for ASME and safety-related incoming materials and items and inspection of fabrication and installation activities; and having nondestructive examination and other testing performed as required.

1.5.1.4.3 Office Supervisor

The Office Supervisor is responsible for directing the activities of the station's clerical staff and for maintaining files of quality assurance documents assigned to him.

1.5.1.4.4 Station Security Administrator

The Station Security Administrator is responsible for directing the station's security plan activities and supervising the on-site security activities.

1.5.1.5 Maintenance Assistant Superintendent

The Maintenance Assistant Superintendent is responsible for directing the maintenance, including repair, of all mechanical and electrical equipment including instrumentation. His responsibility includes planning work, providing on-the-job training of maintenance personnel, maintaining calibration listing for maintenance, arranging for the maintenance work and its inspection to be performed and initiating requisitions for the procurement of tools, materials, equipment and parts from vendors and services from contractors. 9

1.5.1.5.1 Master Instrument Mechanic

The Master Instrument Mechanic is responsible for calibraing, maintaining and repairing instrumentation at the Station. His responsibility includes planning

personnel assigned to the stations, providing needed technical support for the stations and developing operating strategies to improve thermal performance and availability.

1.5.5 System Power Supply Department

System Power Supply is shown in Figure 1-6. The System Power Supply Manager is responsible for managing the bulk power system with the objectives of safe operation, reliable service and efficient utilization of Company-owned production facilities.

1.5.5.1 The Manager System Power Supply has the following responsibilities:

a. Scheduling power generation.

b. Purchase and sale of power from and to other utilities.

c. Coordinating the operation of the Commonwealth system with the Mid-America Inter-Pool Network and other interconnected utilities.

d. Final scheduling of outages for generating stations for corrective and preventative maintenance.

1.5.6 Production Services Department

The Production Services Department is shown in Figure 1-6. The Production Services Manager is responsible for providing functional direction of Production Stores activities (Phase IV), training activities and the Total Job Management Program. 10

1.5.6.1 The Production Services Manager has the following maintenance Production Stores activities responsibilities: 10

a. Control of spare parts inventory;

b. Coordinating procurement of spare parts and materials and assuring that technical and quality assurance requirements are specified in procurement documents; and

1.5.3 Operations Manager - Nuclear Stations

9

The Operations Manager's Staff is shown in Figure 1-6. The Operations Manager reports to the Division Manager Nuclear Stations and has functional responsibility for operation of nuclear stations in a safe and efficient manner and in accordance with Company procedures, NRC Technical Specifications and governmental regulations. His responsibilities include:

9

a. Providing direction to the Operating Assistant Superintendent regarding day-to-day operation of station units.

b. Coordinating unit outages with Power Supply.

c. Reviewing station operating performance for adherence to procedures, technical specifications and other governmental regulations.

d. Reviewing the results of personnel performance investigations and follow-up on corrective actions.

e. Participating in personnel performance investigations as assigned.

f. Participating in station AIR meetings and follow-up as appropriate on corrective actions.

g. Reviewing license event reports and deviation reports for trends, effects on other units and corrective action.

h. Communicating common equipment and system problems among stations in a timely manner.

i. Reviewing station response to NRC inspections and Quality Assurance audits for trends, corrective action, and follow-up on completion of commitments.

j. Initiating and coordinating GSEP drills.

k. Coordinating the implementation of nuclear security regulations.

1.5.4 Technical Services Manager - Nuclear Stations

9

The Technical Services Manager's Staff is shown in Figure 1-6. The Technical Services Manager reports to the Division Manager Nuclear Stations and has functional reponsibility for the Station Technical Staff organizations and work assignments. He has responsibility for career planning of technical

1.7 Division Operations Responsibilities

1.7.1 Substation Construction Department

The Substation Construction Department performs electrical modifications at nuclear generating stations as directed and in accordance with the provision of the Quality Assurance Manual. A Substation Construction Procedures Manual is used to control specific processes and procedures unique to electrical construction and installation.

c. Liaison with company stations and departments, manufacturers and other utilities on spare parts matters.

The Production Services maintenance Production Stores staff, in particular, review station purchase requisitions for safety and ASME Code related spare parts, material and equipment to assure that requirements for Quality Assurance are specified as required and that Stores Code Numbers are assigned to spare parts to be stored at the Station.

1.5.6.2 The Production Services training staff coordinates training activities for Commonwealth's nuclear generating stations. They coordinate the preparation of training materials, surveillance of on-the-job instruction and the scheduling of simulator training and other off-site training.

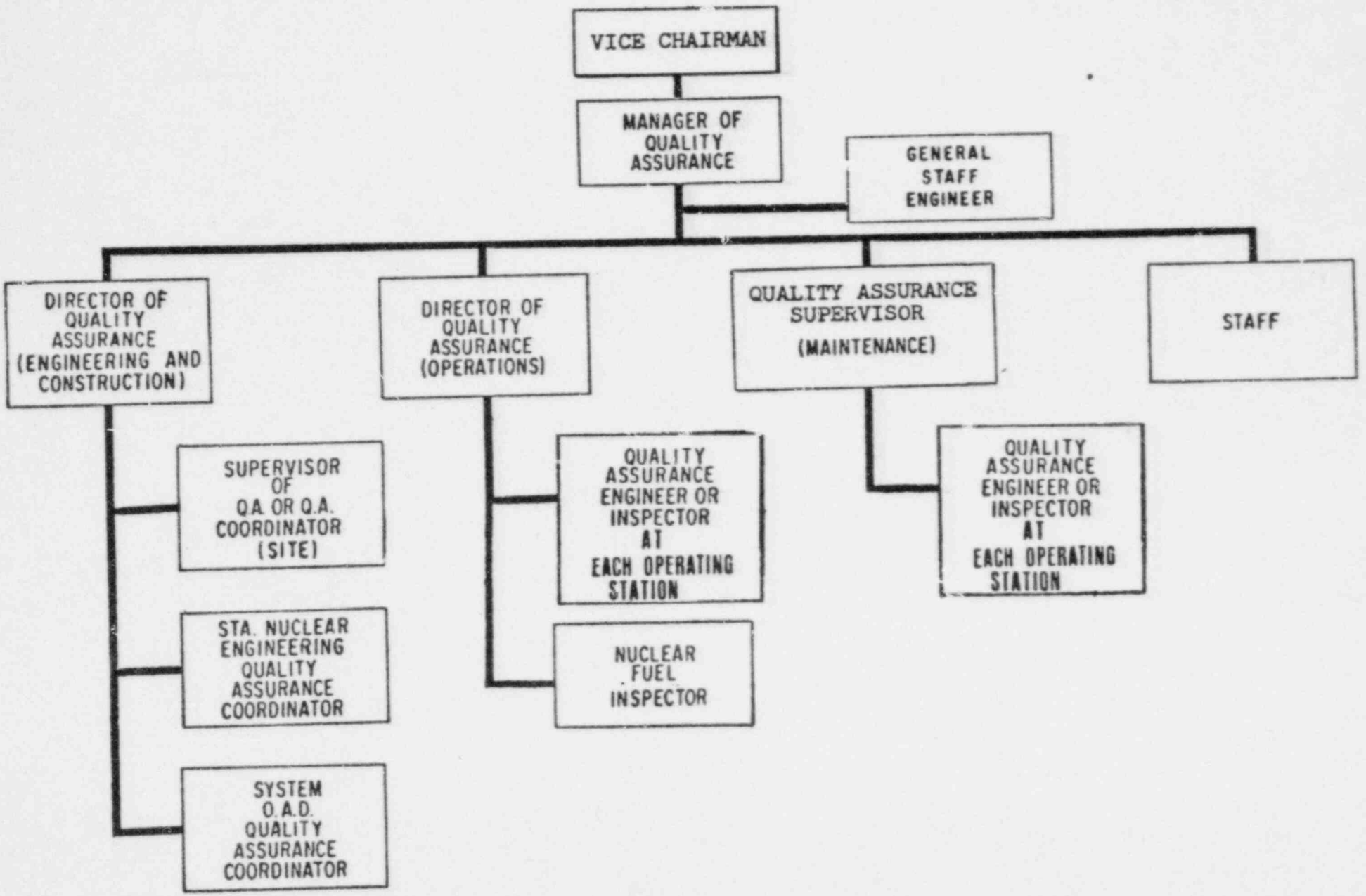
1.6 Purchasing Responsibilities

1.6.1 Manager of Fuel & Budgets

The Vice President (Fuel & Budgets) is responsible for Commonwealth's procurement of nuclear fuel to specifications furnished by the Station Nuclear Engineering Department. He reports to the Vice Chairman on matters involving such fuel. 13

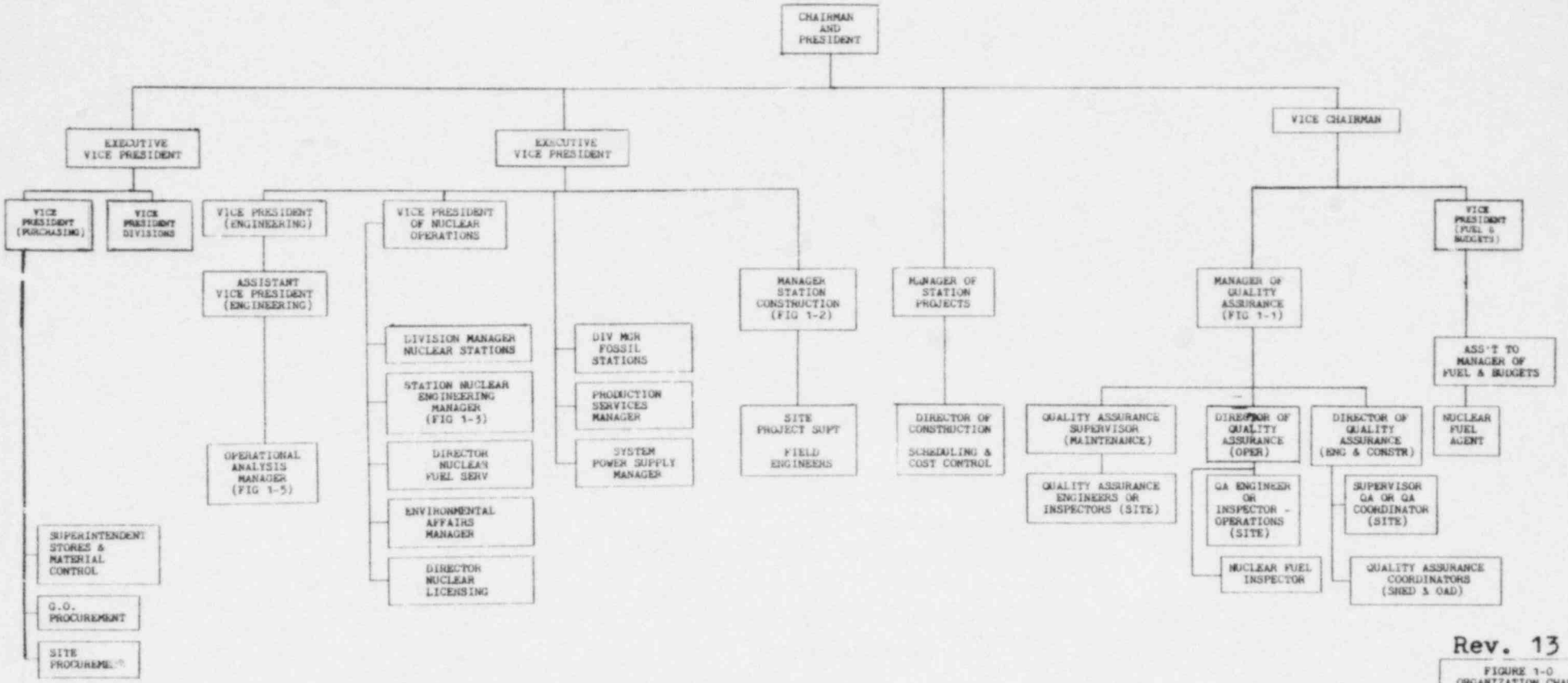
1.6.2 Station Stores Supervisor

The Station Stores Supervisor reports to the Maintenance Assistant Superintendent. The Station Stores Supervisor receives functional direction from the Superintendent Stores and Material Control under the Manager of Purchasing for station storekeeping activities. He is responsible for the administration of the station storeroom including receiving, inspection, storing and issuing spare parts, materials and equipment. His responsibility includes verifying the receipt of quality assurance documents specified in the procurement documents for spare parts, material and equipment directed to him, maintaining inventory records of spare parts, material and equipment and complying with special handling and storing instructions.



Rev. 12

FIGURE I-1
ORGANIZATION CHART
QUALITY ASSURANCE



Rev. 13

FIGURE 1-0
ORGANIZATION CHART
RELATED TO
QUALITY ASSURANCE

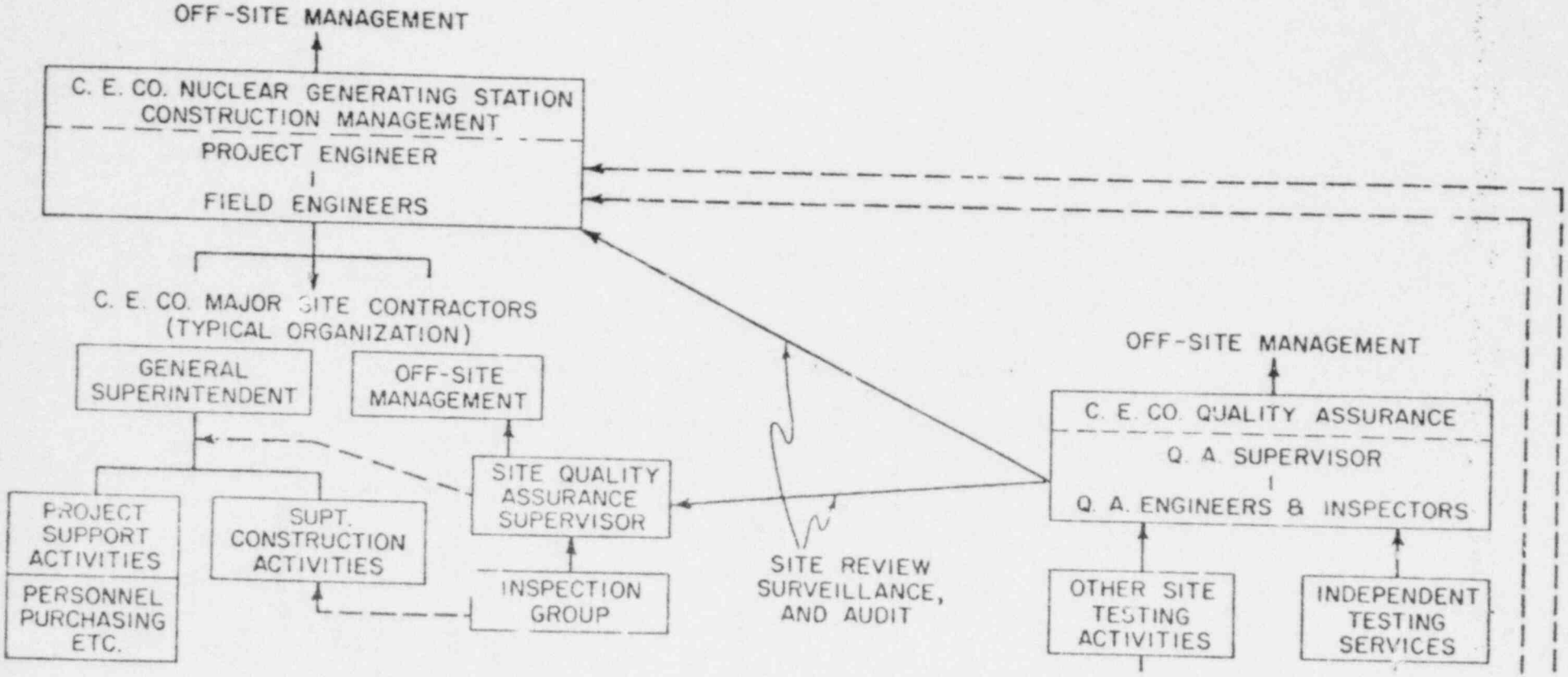
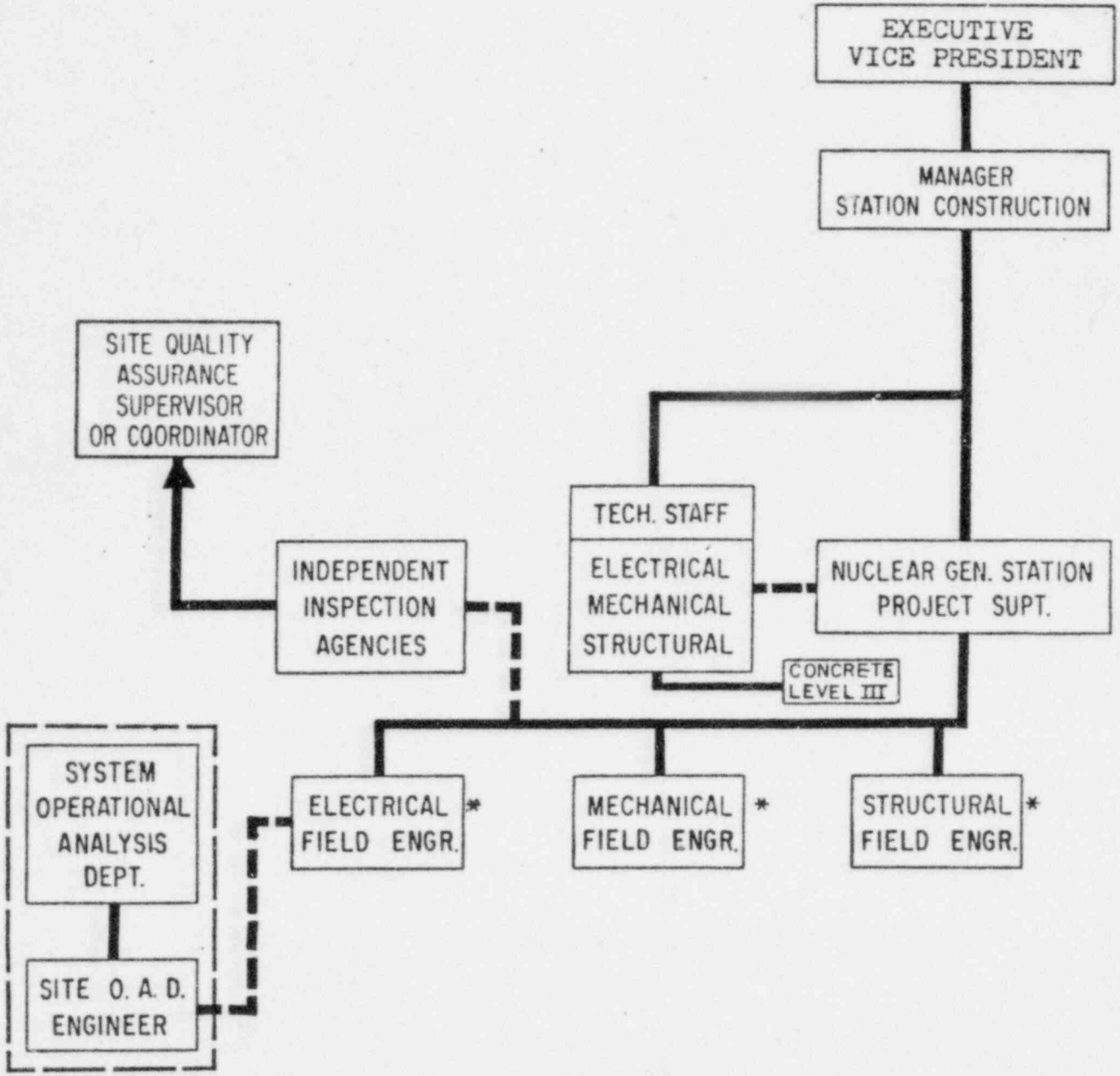


FIGURE 1-2.1
C. E. CO. NUCLEAR GENERATING STATION
SITE ORGANIZATION
INTERFACE RELATIONSHIPS



*Generally Headed by Supervising or Lead Type individuals.

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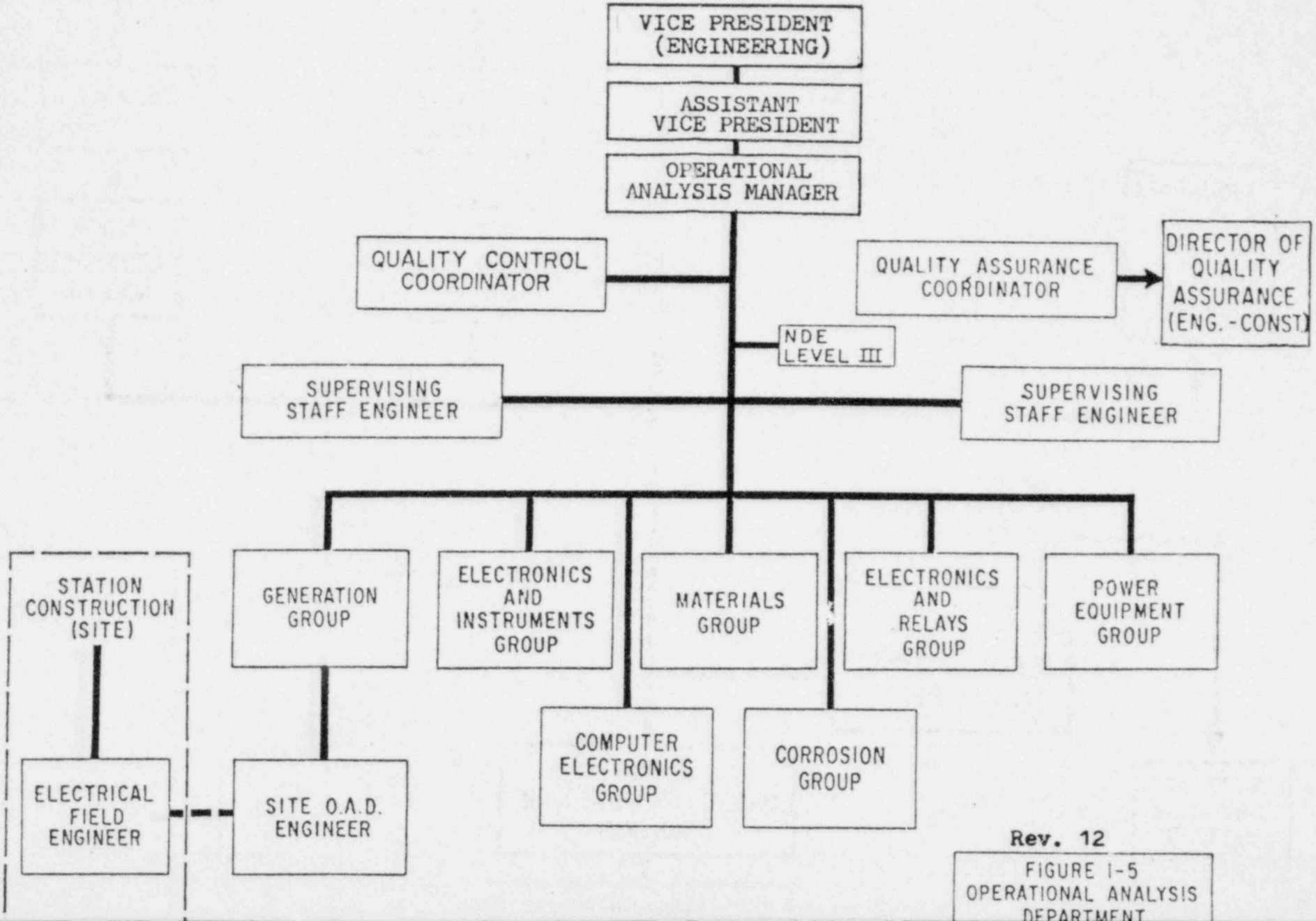
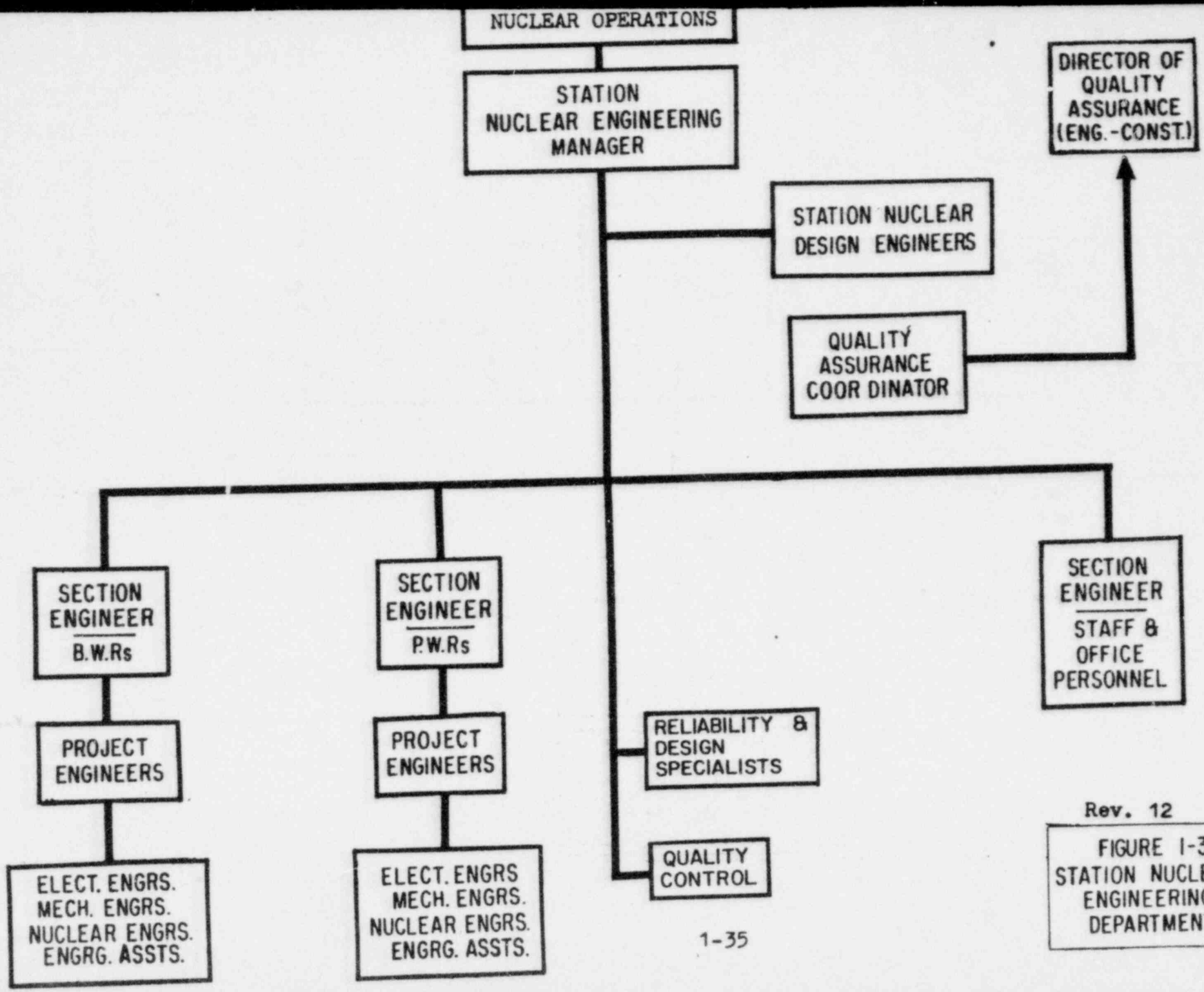
FIGURE 1-2
STATION CONSTRUCTION DEPARTMENT



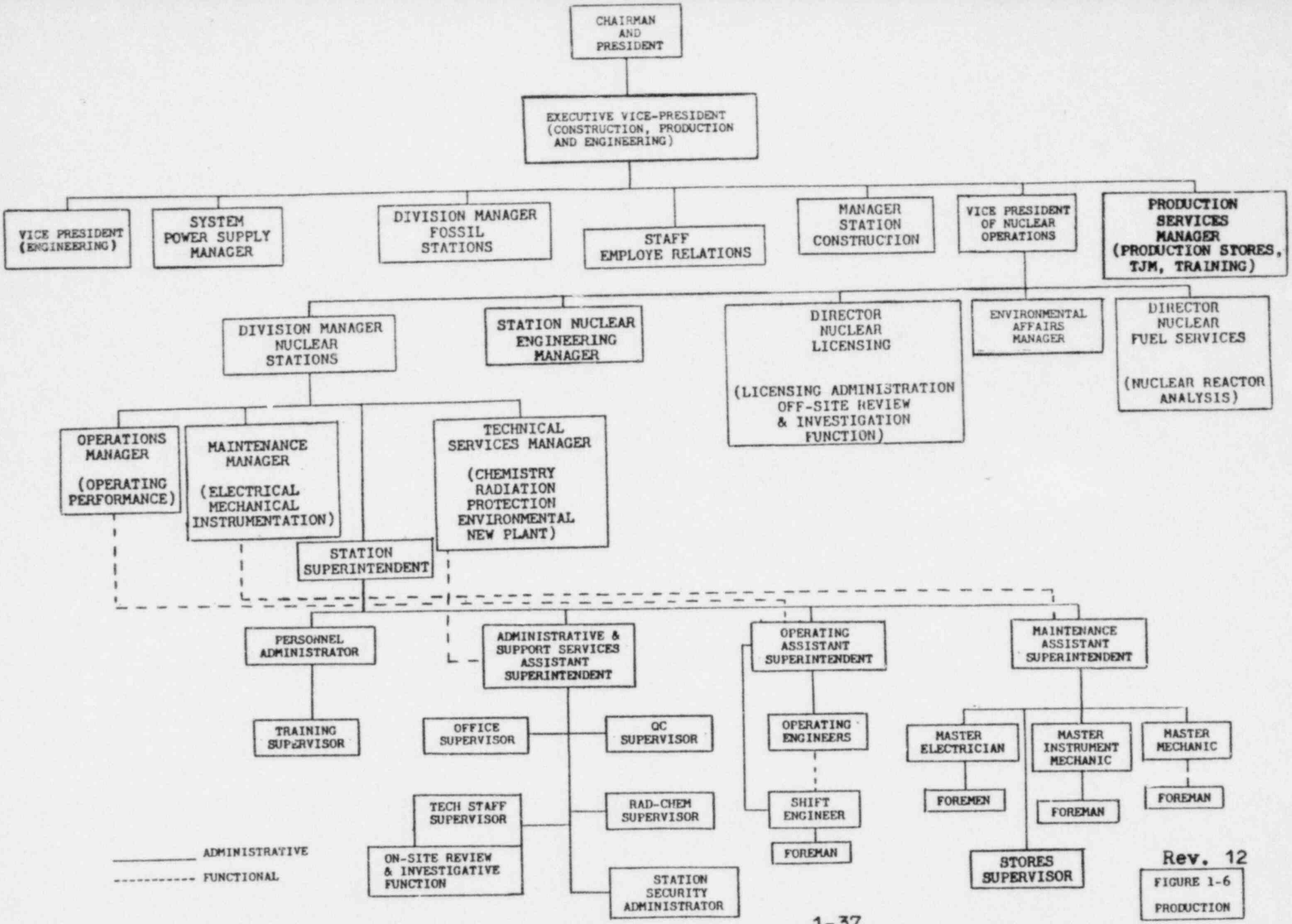
Rev. 12

FIGURE 1-5
OPERATIONAL ANALYSIS DEPARTMENT



Rev. 12

FIGURE 1-3
STATION NUCLEAR ENGINEERING DEPARTMENT



Rev. 12

FIGURE 1-6

PRODUCTION

Edison commits to comply with 10CFR Part 21 - "Reporting of Defects and Noncompliance" and with the Regulatory position of the following Regulatory Guides and the requirements of the following ANSI Standards:

1.8, Rev. 1-R; 1.28, Rev. 1; 1.30, 8-11-72; 1.33, Rev. 2; 1.37, 3-16-73; 1.38, Rev. 2; 1.39, Rev. 2; 1.58, 8-73; 1.64, Rev. 2; 1.74, 2-74; 1.88, Rev. 2; 1.94, Rev. 1; 1.116, Rev. 0-R; 1.123, Rev. 1; and to ANSI N45.2.12, Draft 3, Rev. 4, 2-74. 6

Exceptions or alternatives to this Topical Report for specific plants identified in the Safety Analysis Report will take precedence over commitments in this Topical Report.

It is also the policy of Commonwealth Edison Company to assure a high degree of functional integrity for its generating facilities so as to achieve high availability of these facilities for the production of electrical power and to maintain overall quality levels which will achieve the foregoing in a safe, effective and economic manner.

The Quality Requirements and Quality Procedures of the Company Quality Assurance Program Manual (see Appendix A for Program Manual Index) and described herein, document the written policies and procedures of the Program and are augmented by other written Department and Station procedures and instructions.

The quality assurance programs of Commonwealth Edison Company, Architect Engineers and Nuclear Steam Supply System vendors include the requirements of ASME Section III Article NCA-4000, the quality assurance criteria for nuclear power plants of Appendix B to 10CFR50 "Quality Assurance Criteria for Nuclear Power Plants," and the mandatory requirements of ANSI N45.2, "Quality Assurance Program Requirements for Nuclear Power Plants" and ANSI N18.7, "Standards for Administrative Control for Nuclear Power Plants." The requirements are implemented by means of detailed quality procedures delineating the specific methodology to be used. In addition, individual contractor's, fabricator's and vendor's Quality Assurance programs will include the applicable portions of the Code, Standards and Appendix B as they affect the total program. The overall Commonwealth Edison Company quality assurance program, as a minimum, provides for engineering design control, audit and surveillance of on-site contractors and off-site vendors, surveillance and audit of the performance and quality assurance procedures of the Architect Engineer and CECo Engineering,

2. QUALITY ASSURANCE PROGRAM

2.1 General

The Commonwealth Edison Company has extensive experience with the development, scheduling, design, construction and operation of electric generating facilities. It has pioneered in commercial nuclear power. Commonwealth Edison Company and its consultants and vendors have established designs and specifications for compliance with applicable regulations, ASME Code and National Standards to assure installations of utmost safety and reliability.

Commonwealth Edison Company has attained qualified equipment vendors and contractors through experience, evaluation at vendor plants and site surveillance during plant erection. These efforts add assurance that compliance with applicable design specifications and codes is maintained and a high level of reliability is achieved.

2.2 Policy

It is the policy of Commonwealth Edison Company to assure a high degree of functional integrity of the equipment, structures and safety-related systems of its nuclear generating facilities, the performance of which are essential to the prevention of nuclear accidents that could cause undue risk to the health and safety of the public, or to the mitigation of the consequences of such accidents in the unlikely event they should occur. These systems, equipment, and structures will be identified, designed, fabricated, erected, tested and operated to the criteria and requirements of ASME Boiler and Pressure Vessel Code Sections III and XI, as referenced in the SAR applicable to a specific unit at the time of engineering, construction and major modifications, Appendix B to 10CFR50, and the mandatory requirements of ANSI N45.2 and N18.7 Standards. Also, Commonwealth 5

will be established by the Manager of Quality Assurance or his delegated representative to assure such personnel will have adequate knowledge or skill to perform these activities. These indoctrination and training programs will be an extension of their formal education or work experience.

The training program will consist of, but not be limited to, the following methods as required:

1. Company Quality Assurance Program Orientation
2. Formal Training Programs - classroom and hands-on
3. On-the-job Training - inspections, auditing, testing, etc.
4. Industry Seminars - concrete, coatings, QA/QC, etc.
5. Inter- and Intra-Departmental Sessions

The orientation sessions covering the Quality Assurance Program will include Engineering, Construction, Production, Quality Assurance, Licensing and Operational Analysis Department personnel. Various personnel engaged at all levels of site and station activities and general office functions will be included. These orientation sessions are intended to acquaint personnel with quality assurance/quality control functions and inter- and intra-departmental responsibilities, plus serve as a feedback mechanism to assess and evaluate the Commonwealth Edison Quality Assurance Program.

Individuals engaged in the quality assurance program (Engineering, Construction, Production, Quality Assurance, Purchasing and Operational Analysis) activities will be involved in formal training programs utilizing outside agencies and consultants and, as required, will include the following subjects:

1. Quality Assurance/Quality Control principles
2. Codes and Standards
3. Nondestructive Examination (principles and practices)
4. Special Processes
5. Audits

The "On-the-Job" Training Program will involve new personnel working under the tutelage and direction of experienced and qualified quality assurance personnel. In addition, these programs will include the following as required:

1. Site and Off-Site Seminars for selected subjects
2. Group discussions and problem reviews
3. Individual training and tutoring
4. Appropriate company and other educational courses

The utilization of Industry Seminars will be made as appropriate for responsibilities and disciplines involved.

Purchasing and Construction Groups and for plant operations quality assurance programs covering plant maintenance, repairs, operations, in-service inspections and modifications. For operating stations, the Corporate Quality Assurance Program activities also are covered by written policies, programs, procedures and instructions included in the Station Procedures Manual and other documents. The Manager of Quality Assurance responsibilities include the establishment and control of the Station Program and preparation and authorization of the Quality Assurance Procedures for operations, audit of station activities and review of the adequacy of the Station Program. The Station Superintendent provides written procedures and instructions for the Station Procedures Manual and administers the policies, procedures and instructions from the time the Operating License is issued throughout the operating life of the station. The Quality Assurance Program takes into account the need for special controls, processes, test equipment, tools and skills to attain and maintain the required quality and the need for verification of quality by inspection and test. The Station activities affecting quality are accomplished in accordance with the Corporate Quality Assurance Program using appropriate equipment and suitable conditions, and completing prerequisites. Disputes of a major nature between the Quality Assurance Department and organizations which cannot be resolved will be referred to higher management for resolution. 8

Achievements of the applicable requirements of the Code, standards and specifications for materials, structures, equipment and systems will be verified through independent quality control activities. The control activities will encompass design, procurement specifications, materials, processes, procedures, identifications, testing, nonconformance, corrective action, documentation, handling, storage, operating, maintenance, modifications, in-service inspections and repair.

Commonwealth Edison Company personnel involved in Company Quality Assurance activities will be primarily involved in audit and surveillance of quality control and assurance activities performed by various contractors and other Edison personnel. Inspection, testing and examination activities generally will be performed by outside independent testing service contractors.

To achieve the necessary background and experience for Commonwealth Edison personnel in quality control and assurance activities, indoctrination and training programs

its nuclear power generation facilities are performed in a manner consistent with the policies stated above; (2) provide for documenting, retaining documentation and updating design, fabrication, erection and product quality information necessary for Commonwealth Edison Company operation, maintenance, repair, modification, refueling and in-service inspection of the nuclear power facilities; (3) avoid schedule delays and high cost due to poor quality; and (4) achieve high plant reliability and availability

The Quality Assurance Program applies to safety-related and ASME Section III activities and items and related consumables. The classification of structures, systems and components designated as "safety-related" are listed in the respective Safety Analysis Reports (SAR) of the Stations. A copy of the SAR or the listing will be available in the Operations, Construction, Quality Assurance and Engineering areas, as necessary, for reference. Distribution of and revisions to this listing is controlled and approved by the Station Nuclear Engineering Department. The requirements in ASME Section III, Article NCA-4000 shall be applied to Section III systems and components including concrete containments.

The 18 Criteria of Appendix B of 10CFR50 will be applied to safety-related systems and components for design, construction, maintenance, refueling, in-service inspection, repair and station modifications. Criteria 1, 2, 5, 6, 10, 11, 12 and 14 to 18 and Regulatory Guide 1.33 will be applied to operation of safety-related systems and components.

The Manager of Quality Assurance will be responsible for assuring a regular review of adequacy of the Quality Assurance Program. Periodic written reports will be provided to upper management covering activities and problems involving the requirements of the Quality Assurance Program. Also, an overall report will be made annually to upper management for their assessment as to scope, status, implementation and effectiveness of the Quality Assurance Program to assure that it is adequate and complies with 10CFR50, Appendix B Criteria. This annual assessment is preplanned and documented. Required corrective action is identified and tracked.

The Quality Assurance Programs in the Commonwealth Edison Company Quality Assurance Program Manual and revision thereto are approved and controlled by the Manager of Quality Assurance and may only be revised with his approval. The Quality Requirements and Quality Procedures shall be revised in concert with addenda to reflect revisions in the ASME Section III Code for Class 1, 2, 3, CS, MC and CC components. Such revisions to the Quality Requirements involving ASME Section III shall require acceptance by the Authorized Nuclear Inspection Agency and notification plus evidence of such acceptance to the

Edison personnel engaged in testing activities will be assigned according to their formal education and on-the-job experience. Additionally, training programs will be developed to indoctrinate and qualify personnel in specific inspection, testing or examination activities in which they will be engaged. The Operational Analysis Manager will be responsible for the development and execution of these programs.

Training will be conducted in a time frame adequate to prepare personnel for their job responsibilities. When a project or station organization is developed, the Directors of Quality Assurance are responsible for reviewing the adequacy of trained and certified personnel and recommending necessary training programs. Retraining sessions will be scheduled to assure that adequate skills are maintained for qualified and/or certified personnel. Certification records will be maintained by the Quality Assurance Department as well as the department where in the employe performs his activities. Qualification and certifications will be maintained in a current status and will be established to meet the applicable requirements of ASME Code and ANSI Standard N45.2.6.

The training and certification of personnel associated with nondestructive examination will be carried out in accordance with the requirements of SNT-TC-1A and the Code. A Level III certified person will administer this activity and the program will be under the surveillance of the Directors of Quality Assurance or their delegated representatives. Likewise, a Level III certified person will administer the concrete containment inspection as applicable under Division 2 of the ASME Code. Training and certification of personnel associated with concrete containment inspection will be carried out in accordance with Appendix VII of ASME Section III, Division 2. 2 2

The period of qualification shall be a minimum of two and a maximum of three years. Near the end of such a period, employes will be notified that they will require either retraining and requalification and/or recertification to renew their qualification status.

Contractor personnel engaged in inspection, examination and testing activities will be required to be trained, qualified and certified to perform their specific activity in accordance with the above requirements.

The objectives of the Commonwealth Edison Company Quality Assurance Program are to: (1) establish with confidence that the design, fabrication, erection and operation phases of

Authorized Nuclear Inspector prior to issuance. Concurrently, a copy of the updated Corporate Quality Assurance Manual shall be made available to the Authorized Nuclear Inspector at stations where Code work is being done. Programmatic changes to the Program are submitted to NRC for acceptance prior to implementation. Organizational changes are submitted within thirty days of the effective date. Quality Assurance Procedures involving engineering, construction, operating and maintenance modification, in-service inspection and Stores activities, and revisions thereto, are signed by the Head of the principally involved department and the responsible Director of Quality Assurance or Quality Assurance Supervisor (Maintenance) and approved by the Manager of Quality Assurance. 11

Approval of the Quality Assurance Program Manual Indexes indicates approval of respective changes to the individual pages in the Corporate Quality Assurance Manual. Sections 2 and 5 of the Quality Procedures provide the procedures for implementing this section of the Quality Requirements.

and constructability. The Division Manager-Nuclear Stations will be responsible for review of designs for operability, inspectability and maintainability. 8

Coordination of the design review and evaluation effort by the Station Nuclear Engineering Department will be, in part, directed toward the identification and control of design interfaces, radiation and environmental requirements, functions and boundaries, and selection and application of materials, parts, equipment appurtenances and components.

The Station Nuclear Engineering Department, with assitance from other organizations, contractors or vendors, shall apply design review and control measures to items such as: reactor physics; loads and loading combination, transient and accident analysis, compatability of materials, structural support, accessibility for in-service inspection, maintenance and repair; and delineation of acceptance criteria for inspections and tests.

The Station Nuclear Engineering Department, Architect Engineer or Nuclear Steam Supply System Supplier interpret applicable requirements, standards, guides or codes (including classification of ASME Section III items) and use them as a basis for classifying structures, systems and components and establishing boundaries of jurisdiction in each nuclear power plant.

Evidence of design evaluation and reviews and use of alternative calculational methods used to assure verification or checking of design adequacy will be documented and retained by the Station Nuclear Engineering Department. Errors and deficiencies discovered shall be documented and appropriate corrective action shall be taken. The Station Nuclear Engineering Manager or his agent or designee shall certify that a review has been conducted and that the design drawings, stress calculations and Design and Construction Specifications and Reports do satisfy design requirements. Changes to drawings used for construction from the corresponding drawing used for stress analysis shall be certified, by the person or organization responsible for the stress analysis calculations, to have been satisfactorily reconciled with those calculations. Copies of the certification shall be attached to the copies of the Stress Report, design drawings, stress calculations and Design and Construction Specifications and Reports which are made available, as applicable, to the Inspector for review and certification and the enforcement authorities having jurisdiction over the nuclear power plant installation as provided by ASME Section III of the Code for Classes 1, 2, 3, CS, MC and CC.

3. DESIGN CONTROL

3.1 General

The fundamental vehicle for design control involves multi-level review and/or evaluation of design documents by individuals or groups other than the original designer or designer's immediate supervisor whose authority and responsibility are identified and controlled by written procedures. Also, procedures are established to assure that verified computer codes are certified for use and that their use is specified. The design documents include, but are not limited to, system flow diagrams, design and construction specifications, load capacity data sheets, design reports, equipment specifications, process drawings. Design calculations are also subject to two or more levels of evaluation or review including that performed by the originator plus review and audit by Station Nuclear Engineering where design work is performed by the Architect Engineer or other vendors or contractors. 11

These design evaluations or reviews are conducted to written procedures and include consideration of quality standards, quality assurance requirements, materials suitability, process suitability, interface control and suitability of analytical or testing requirements as appropriate. Also, design verification may be achieved under a test program by qualification testing of a prototype unit under adverse design conditions.

Responsibility for overall design and design control of mechanical, electrical, structural and nuclear related systems and components and compliance of responsibilities to Section III of the ASME Code is assigned to the Station Nuclear Engineering Department. Quality Assurance shall assure that design control requirements are fulfilled through review and audit.

The extent of the design review and evaluation of the original designs and modifications will be determined by the complexity of the system and any safety-related function to be performed by that system. Design evaluations of modifications will be commensurate with those applied to the original design. Review and evaluation by the Architect Engineer, the Nuclear Steam Supply System vendor, and/or the Station Nuclear Engineering Department will assure that designs and materials will conform to the ASME and other applicable codes, standards, regulatory requirements, SAR commitments and appropriate quality standards, as applicable. The Station Nuclear Engineering Department will review and evaluate the overall design for safety, reliability, inspectability, maintainability

a review for disposition will be requested of the Station Nuclear Engineering Department. The verifying or checking of design features and modifications is done by qualified individuals or organization other than those who prepare the original design or design modification but who may be from the same organization.

The assigned installation department furnishes the Station Nuclear Engineering Department as-built information to review as to correctness and to issue as-constructed drawings.

Test data required by the Station Nuclear Engineering Department involving initial construction and modifications to verify the satisfactory installation of components is obtained by organizations designated by them.

After completion of construction, station operating personnel and Quality Control personnel verify the satisfactory final testing of systems required by the Station Nuclear Engineering Department. Also, where applicable, before the component or appurtenance is placed in service, copies of the appropriate ASME Data Reports and Certified Design and Construction Reports and Design and Construction Specifications are filed at the location of the installation and made available to the Authorized Nuclear Inspector and to the enforcement authorities having jurisdiction (Superintendent of Boiler and Pressure Vessel Safety, Division of Boilers and Pressure Vessel Safety, Office of the State Fire Marshall). Completed Data Report Form N-3, however, shall be filed by CECo with such enforcement authority having jurisdiction.

3.2 Design Changes

Design changes are controlled through document revisions resulting from design change requests and/or design change notices and are reviewed and evaluated in the same way as the basic design documents. Site and Station design change requests will be reviewed by the Site Quality Assurance Supervisor or Coordinator, Technical Staff Supervisor, Station Nuclear Engineering Department personnel and/or Architect Engineer, as applicable, and will be approved by the Station Nuclear Engineering Department after which the approved change will be incorporated in design documents, approved, released and distributed.

The extent of the evaluation will be determined by the complexity of the change and its safety-related function with respect to the original design. Coordination of review and evaluation of design changes will be by the Station Nuclear Engineering Department. The control of documents will be maintained within the system described in Quality Requirement 6.0, "Document Control."

Plant modifications will be evaluated in accordance with the requirements of 10CFR50.59 and to the requirements of the ASME Boiler and Pressure Vessel Code Section III and will be submitted to the Director Nuclear Licensing/Supervisor Off-Site Review and the Station Superintendent. Also, the modification will be reviewed with the Authorized Nuclear Inspector who will then stipulate the inspections he intends to make prior to implementation of the modification work. The Station Superintendent authorizes the modification. The Technical Staff Supervisor reviews and approves the proposed modification and is responsible for verifying that operating procedure changes are accomplished as to station modifications. The Station Training Supervisor is responsible that required training concerning plant modifications is accomplished for responsible plant personnel where the performance of their duties may be affected. Quality Assurance assures such training is completed. The Director Nuclear Licensing reviews and approves proposed modifications to plant systems and components involving a revision to the Technical Specifications or a previously unreviewed safety question. Evaluation and approval of the substitution of equipment is performed by the Technical Staff Supervisor and either the Operating Assistant Superintendent or Maintenance Assistant Superintendent. The Station Nuclear Engineering Department or equipment vendor provide engineering analysis as required by the design specification. 11

The Station Nuclear Engineering Department assigns an organization to verify installation of modifications in accordance with design and quality assurance requirements. When modifications cannot be completed in accordance with drawings and specifications,

inspection documentation. Also, requirements for vendor documents, such as instruction, procedures, drawings, specifications and vendor quality assurance records to be prepared, submitted or made available for review or approval are included. In addition, included in the procurement documents are provisions for right-of-access to vendors' facilities and work documents for inspection and audit and for vendor reporting and disposition of nonconformance from procurement requirements.

Basic procurement control is by CECo with procurement of major equipment and items being purchased by the General Office Purchasing Department and procurement of standard type materials and items being performed by its satellite purchasing organization at certain sites. 2

For procurements initiated by the Station Nuclear Engineering Department, the Project Engineer, prior to submittal of the Engineering Proposal Request to the Edison General Purchasing Agent, prepares a suggested list of prospective bidders for each specification from the Approved Bidders' List and using input from the Architect Engineer and the cognizant Purchasing Department Buyer. This list is established using such factors as past experience, experience of other utilities, or specific qualification surveys (either desk or field surveys are used). For Code work, the desk survey shall be limited to determination that a supplier or contractor is the holder of a valid Certificate of Authorization for the scope of work involved or for determining if a supplier or contractor is potentially qualified. The final list of prospective bidders as well as the person agreeing to the list are indicated on the Nuclear Proposal Request (NUPR) Form and is approved by the Station Nuclear Engineering Manager or designated alternate. The persons agreeing to the list are key representatives of the Station Nuclear Engineering Department, Station Construction Department, Production Department, Purchasing Department and, when requested, the Architect Engineer. Where bids are obtained from prospective bidders from other than those listed on the Approved Bidders' List maintained by the Purchasing Department, such bids shall be be indicated as trial bids and treated as trial bids until the bidders are evaluated and approved as acceptable prior to award. 2

Upon completion of the evaluation of the proposals from approved bidders for either original plant or plant modification items or services, the responsible Project Engineer of the Station Nuclear Engineering Department shall have prepared and, after final review and approval indication by the Quality Assurance Coordinator, shall have transmitted to the Purchasing Department a letter of recommendation and a purchase requisition. The purchase

4. PROCUREMENT DOCUMENT CONTROL

The procurement documents include equipment specifications or service specifications, each of which are reviewed or evaluated as described in Section 3 for design and construction, and design and construction for modifications. Changes to procurement documents are subject to the same review and approval requirements as the original documents. Contract or purchase order documents are reviewed by the NSSS Supplier for NSSS items and by Edison and the Architect Engineer for non-NSSS items to insure that all requirements have been incorporated specifically or by reference.

Records pertaining to the review and evaluation of procurement documents involving initial plant installations and plant modifications will include, in whole or in part, minutes of meetings, comment letters, design review records, project quality assurance audits and a copy of the original design document marked with comments or latest revisions. These records will be kept in vendor files and/or applicable Commonwealth Edison Company department files during the Engineering, Construction and Operation phases of the generating station.

The quality requirements for each item or service to be procured will be clearly stated in the bid package, contracts and purchase orders. Also, the review for suitability of application of standard "off-the-shelf" commercial or previously approved materials, parts and equipment that are safety-related will be imposed on vendors. Where material, equipment, systems or services require contractors to adhere to ASME Code requirements or have ASME Certificates of Authorization, these requirements will be contained in the procurement documents. Quality Assurance Program requirements are included as are regulatory, code, standard and design requirements. Similarly, the required methods of identification, preservation and packaging, and methods of controlling conformance to acceptance criteria are covered by these documents. Quality Assurance Program requirements are included in initial procurement contract and reviewed for acceptability by Quality Assurance to provide for implementation of the approved quality assurance program, vendor evaluation, inspection and test planning, vendor surveillance, witnessing of inspection control points and

requisition and/or letter will incorporate, by reference, those documents such as specifications, drawings, proposals, supplementary proposals, etc., and any conditions of award which form the basis for the evaluation and award. Edison Purchasing, based on the recommendation letter, its own evaluation and the purchase requisition, shall conduct necessary negotiations and clarifications and make the award to a bidder on the Approved Bidders' List. Any changes evolving from the procurement activities involving technical or quality assurance matters, either for the original purchase or subsequent change orders, shall be approved by the originator of the purchase or change order requisition.

The Station Nuclear Engineering Manager will assign authority for evaluation of the vendor quality assurance program, prior to final award of the contract or purchase order, to the Project Engineer who will be assisted in such evaluation by the Director of Quality Assurance (Engineering-Construction) and the Architect Engineer. Quality Assurance evaluates all such vendor quality assurance programs. The Quality Assurance Coordinator assigned to the Station Nuclear Engineering Department is responsible for assuring that the evaluation is carried out and for auditing the manuals of bidders being recommended as acceptable for award as to resolution of comments received by Engineering from Quality Assurance and others plus evaluation by Engineering. As part of the vendor quality assurance program evaluation, the Quality Assurance Coordinator will assure all vendor quality assurance program deficiencies are resolved. Concurrence by Quality Assurance shall be required. If the vendor program deficiencies are minor and/or may be corrected by specific procedures for the work to be done, the resolution may follow an award and shall be a condition of the award.

For procurements performed at certain construction sites by the Purchasing Department satellite organization involving safety and Code-related items, the preparation of the necessary procurement documents is the responsibility of the Station Construction Department. Procurements by the site Purchasing organization are under the control and management of the General Office Purchasing Department and associated procurement documentation packages are formulated from specifications and drawings issued and approved by Engineering. The cognizant Field Engineer prepares the suggested list of prospective bidders for each procurement package from the Approved Bidders' List with direction from the site Purchasing Department Buyers. The final list of prospective bidders and procurement bid package is approved by the Station Construction Project Superintendent or Engineer or his designated alternate. In addition, such procurement bid packages involving the purchase 2

of ASME Code and safety-related materials and items are required to be reviewed and approved by the site Quality Assurance Supervisor or Coordinator, or designated alternate verifying that the necessary technical and Quality Assurance requirements are included and the proposed bidders are acceptable.

The bids are evaluated by Station Construction and an award recommendation plus a purchase requisition is prepared and transmitted to Purchasing via the site Quality Assurance Supervisor or Coordinator or his designated alternate, for final review and approval indication. Site Purchasing, based on the recommendation of the Station Construction Department, its own evaluation and the purchase requisition conduct necessary negotiations and clarifications and make the award to a bidder on the Approved Bidders' List. Any changes evolving from the procurement activities involving technical or quality assurance matters, either for the original purchase or subsequent change orders, shall be approved by the originator of the purchase or change order requisitions as well as Quality Assurance.

The Vice President (Fuel & Budgets) is responsible for the preparation of nuclear fuel bid documents, for the evaluation of bids received and for the purchase of nuclear fuel. The Nuclear Fuel Fabrication Inspector provides quality assurance assistance. The Station Nuclear Engineering Manager and the Director Nuclear Fuel Services furnish technical assistance to the Nuclear Fuel Agent during the preparation of bid documents and the evaluation of bids.

When the Maintenance Assistant Superintendent or Technical Staff Supervisor orders spare parts, material and equipment for safety-related items to applicable engineering requirements, they specify the quality assurance documentation requirements equivalent to or better than the original installation. When spare parts, material and equipment are ordered by part number or nomenclature without special engineering requirements being specified, appropriate statements are included in the purchase order to assure quality equivalent to original equipment. The Quality Control Supervisor shall review and verify that quality assurance, specification, ASME Code and other applicable codes and standards requirements and special requirements are included in the Request for Purchase.

The procurement documents are reviewed and processed by the Production Stores Group, of the Production Services Department. Coded part numbers are assigned to spare parts. The Manager-Production Services and the Manager of Quality Assurance, or their designees, review and approve that the quality assurance requirements for documentation of spare parts, welding materials, material and equipment as outlined above are included in the procurement request documents and

that the items are ordered from the original equipment supplier or an evaluated and approved alternate supplier.

The bid package and the resulting contracts or purchase order will clearly reference applicable revision dates of appropriate drawings and specifications for the item or service being procured. Appropriate revisions of ANSI, ASME or other applicable codes and/or standards will be considered a part of the design requirements and be referenced in the bid package, contract or purchase order.

The bid package and resulting contract or purchase order will contain the requirements for inspection, testing and inspection documentation.

Commonwealth Edison Company, its contractors, subcontractors and vendors will be responsible for their respective programs by which an appropriate review and audit will determine that the requirements of this Section have been met.

Procurement documents will identify which records indicative of quality will be transmitted to Commonwealth Edison and the method of dispositioning those which the vendor retains.

The bid package and resulting contract or purchase order will contain, as applicable, the requirement for the contractor to have and implement a quality assurance program for purchased materials, equipment and services to an extent consistent with their importance to safety and will state the controls which will exist between the purchaser and seller in requesting and accepting changes under the purchase order or contract.

Procurement of spare parts or replacement items will be subject to controls at least equivalent to those used for the original equipment.

5. INSTRUCTIONS, PROCEDURES AND DRAWINGS

The quality assurance actions carried out for design, construction, testing, and operation activities will be described in documented instructions, procedures, drawings, specifications, or checklists. These documents will assist personnel in assuring that important activities have been performed. These documents will also reference applicable acceptance criteria which must be satisfied to assure that the quality related activity has been properly carried out.

Activities affecting quality are required by the Edison quality program to be prescribed by documented instructions, procedures or drawings. Procurement documents and the corporate quality assurance programs of Edison, the NSSS Supplier and Architect Engineer reflect this requirement. Each Edison Department involved in safety related and ASME Section III Code work shall have documented procedures to implement their responsibilities. 2

Quality Procedures as part of the Commonwealth Edison Company Quality Assurance Manual will be written for design, construction, testing, operations, maintenance and repair activities. Where appropriate, these procedures will include checklists containing the necessary elements of operation to be observed or measured. These checklists will be used to the maximum extent practical to document the actions performed.

Generating Station operations, procedures and instructions will be provided by the Generating Station Superintendent and will be included in the Station Procedures Manual in a timely manner consistent with NRC license requirements for administering the policies, procedures and instructions from the time that the Operating License is issued through the life of the Station. These procedures and instructions include: Administrative Procedures, Overall Station Procedures, System Operating Instructions, Chemical Control Procedures, Emergency Operating Procedures, Surveillance Procedures, Maintenance Procedures, Instrumentation Procedures, and Radiation Control Standards. Also, a Station Quality Assurance Program for Maintenance, Modification, In-Service Inspection and Stores Activities

will be provided. The procedures include specifications and acceptance criteria as well as vendor documents. Complex procedures include checklists as part of the procedure and caution notes applicable to specific steps in the procedure are included.

The current revision of the Station Procedures Manual is available in the Station Control Room and is additionally provided to key operating and management personnel.

Maintenance and repairs to structures and equipment after construction and testing is completed are the responsibility of each Maintenance Assistant Superintendent and are performed in accordance with applicable drawings, procedures, instructions, and/or checklists. When ASME Code work is involved, these documents shall be submitted to the Authorized Inspector for insertion of his hold points. Drawings procedures, instructions and/or checklists are used for maintenance and repairs outside the scope of normal station craft maintenance capability. When procedures and/or checklists are not available for work outside the scope of normal station maintenance craft capability, an outline of the steps to be followed will be prepared to assure proper completion and testing of the maintenance or repair work. These procedures and/or checklists or outlines are supplemented as necessary by instructions from the personnel responsible for directing the specific maintenance or repair work. Maintenance, modification and inspection procedures and other quality assurance related documents are reviewed by Quality Assurance personnel to assure the need for inspection, identification of inspection personnel, and documentation of inspection results plus necessary inspection requirements, methods and acceptance criteria is provided. 11

Each Station Superintendent or his designee is also responsible for preparation of procedures to assure the safe operation and refueling of the Station in accordance with requirements of the NRC operating license. The Division Manager-Nuclear Stations provides direction for the preparation of necessary instructions and procedures to accomplish the Station activities in a uniform and systematic manner.

Procedures and instruction supplementing the Quality Procedures of the Quality Assurance Manual generally will be prepared, reviewed and approved within the individual departments, Generating Stations and Construction Sites responsible for the activities involved as the need arises and their use monitored by Quality Assurance Administration. Any CECo departmental group involved with nuclear plant design, procurement, construction or operation may propose procedures as necessary to meet regulatory, ASME Code or other applicable code requirements.

The procedures will be independently reviewed and evaluated by other involved departments with interface responsibilities and the comments forwarded to the issuing department.

6. DOCUMENT CONTROL

A document control system will be used to assure that documents such as specifications, procedures, and drawings are reviewed for adequacy and approved for release by authorized personnel. Also, this system includes as-built drawings and provisions to assure as-built drawings are kept updated, properly maintained, and controlled. Such documents will be distributed to and used at the locations where the prescribed activity is performed. Changes to these documents will be handled similarly and will be reviewed and approved by the same organization that performed the original review and approval, unless delegated by the originating organization to another responsible organization. 11

Documentation will identify design documents, provide a schedule for completion, define design milestones or other control points, and identify design responsibilities with particluar attention to the definition of organizational interfaces. Design documents will include ASME Code, seismic and other analysis reports, drawings, equipment specifications, work instructions, test procedures, etc., necessary to achieve proper procurement, installation, start-up and operation of systems and components in accordance with engineering requirements. Document control will include documents containing requirements for materials, fabrication, special processes, testing, inspection, cleaning, packaging, shipping, storage, maintenance, refueling, operations, and plant modifications, as applicable.

The fundamental control vehicles for documentation relating to Safety Category I systems, structures and components are project distribution lists and periodic document status reports. The Architect Engineer acts as the general distribution agency for project documents (except for internal Edison Quality Assurance Procedures) and carries out the distribution in accordance with a list furnished by Edison for specific types of documents. Both the Architect Engineer and the NSSS Supplier publish periodic

status reports (monthly to bi-monthly) identifying those documents currently in force. These reports are distributed to all involved parties. Each document recipient is responsible for insuring that only the latest authorized documents are in use and that void documents are so identified. Periodic inspections and audits are employed as a final check to assure that the latest authorized documents are in use.

Master distribution lists will be used and will designate recipients of document copies. This listing shall include document changes, distributions for comments, and/or distribution for use. Quality Assurance Manual distribution and revisions, thereto, are controlled by Quality Assurance using a master distribution list.

Status reports will be issued periodically by the Station Nuclear Engineering Department, Architect Engineer and NSSS Supplier to all parties on the distribution list stating the latest revision of documents to assist recipients in maintaining up-to-date files. Each document recipient on the distribution list is responsible for insuring that only the latest authorized documents are in use and that void documents are so identified.

The Station Nuclear Engineering Department Project Engineer has the responsibility to establish document control procedures and methods during design, construction, preoperational and start up testing, and plant modifications to provide that documents are reviewed for adequacy and are approved by authorized personnel for issuance and use at locations where the prescribed activity will be performed before the activity is started.

The Station Superintendent has the responsibility to establish document control procedures for operation, refueling, maintenance, and repair. Distribution and revisions of documents at the Station are controlled in accordance with Station Administrative procedures. The Station Office Supervisor maintains the station files for controlled documents. Superseded documents retained for reference are so marked. The Maintenance Assistant Superintendent assure the latest revisions of documents for maintenance and repair are in their working files. The Technical Staff Supervisor will incorporate changes to maintenance and operating criteria into station procedures and instructions in a timely manner.

The Station Construction Department or the Nuclear Division Maintenance Department, whichever has assigned a representative with prime responsibility for new plant construction or modification work, shall be responsible for collecting and retaining the inspection and test documentation during construction and installation of assigned plant modifications and for transferring such documentation to, or within, the Station for review and acceptance and permanent filing. 10

Control and approval of subcontractors quality assurance programs, procedures and personnel qualification, are the responsibility of the specific contractor involved. Such contractor actions are to be documented and will be subject to audit by CECo.

7.2 Evaluation of Vendors

An evaluation of vendor capability will be required for ASME Section III and safety-related items. Where valid records of vendor capability and quality performance are not available to CECo, a survey of the supplier's facilities, capabilities and quality assurance system will be made by CECo or its designated representative. For items requiring ASME Code conformance, vendors must be able to meet ASME Code requirements.

The Station Nuclear Engineering Department Quality Assurance Coordinator will be responsible for assuring that vendor or contractor Quality Assurance Program evaluations are carried out. The Purchasing Department will maintain the Approved Bidders' List for contractors and suppliers of ASME and safety-realted items. Addition of vendors to the Approved Bidders' List shall only be made upon approval by Station Nuclear Engineering Manager and the Manager of Quality Assurance, or their designees, as to meeting technical and quality assurance requirements.

Section 9.0 of this report, "Control of Special Processes," establishes the evaluation and assessment of certain process and inspection capabilities of the vendor such as welding, heat treatment, and nondestructive examination.

Past performance of a contractor/vendor will be considered during procurement activities by CECo. Prior to contract or purchase order award, the bidder's capability and quality performance will be reviewed relative to the product, process, or service being procured. If records are inadequate, a survey of the bidder's facilities prior to award may be required. Such surveys will include, as applicable, review of facilities, organization, quality assurance program and experience, existing controls, knowledge of special processes, possession of a current ASME Certificate of Authorization, and an understanding of, and a willingness to meet contractor or purchase order requirements.

7. CONTROL OF PURCHASED MATERIAL, EQUIPMENT AND SERVICES

7.1 General

The control of the quality of purchased material, equipment and services is achieved through the evaluation of vendors, surveillance of their operations and required source inspection, documentation, receiving inspection and retention of quality records. Both Edison and the NSSS Supplier have direct procurement functions for the Station. The Architect Engineer offers recommendations to Edison on vendor selection and reviews vendor efforts as directed by Edison. Edison will inspect and audit the NSSS Supplier control of purchased material, equipment and services. Edison has the responsibility for on-site control of Edison and the NSSS Supplier purchased material, equipment and services.

Contractors and suppliers furnishing material, equipment and services to CECo for items within the jurisdiction of this Quality Assurance Program will be selected on the basis of demonstrated capability to provide a product, process or service in accordance with the design specifications and contract provisions.

The purpose of this Section is to define the quality system elements and related policies which assure the quality of purchased material, equipment and services through the evaluation of vendors, surveillance of their operations, required source inspection, documentation, receiving inspection and retention of quality records.

The Station Nuclear Engineering Department Project Engineer in conjunction with Quality Assurance will require a Quality Assurance Program in accordance with ANSI N45.2 or ASME Boiler and Pressure Code Section III from vendors or contractors consistent with the importance of the procurement to station safety and operation and the requirements of ASME Section III and 10CFR50 Appendix B. In addition, Edison's procurement documents will provide notification to vendors and contractors that the provisions of 10CFR Part 21 apply. 2

7.3 Surveillance of Vendor Operations

Source surveillance will be carried out through notification points established as a condition of procurement of safety-related or ASME Section III items. Special consideration will be given for surveillance during manufacture when one of the following is involved:

a. Determination of conformance of the item to purchase order requirements at any other point would require uneconomic disassembly or destructive testing.

b. Special instruments, gauges, or facilities required for inspection or test are more readily available at source and would be uneconomic to reproduce at the job site.

c. A receiving inspection would destroy or require replacement of special preservation and packing.

d. Quality Controls and inspections are integrated into production methods, and inspection at the suppliers plant is necessary to economically verify test reports, inspection records, certifications or other evidence of quality.

Source surveillance by Commonwealth Edison Company or its agents will not nullify the vendor's responsibilities for maintaining a quality control organization delivering items conforming to procurement requirements. Unless otherwise specified, acceptance by Commonwealth Edison Company will be at the nuclear generating station site in accordance with the terms of the contract. The administration, surveillance and inspection of off-site equipment and material vendors will be the responsibility of the Station Construction Department with final approval of inspection acceptance reports being vested in the Quality Assurance Department.

7.4 Receiving Inspection

Materials and articles received from vendors will be inspected upon receipt to assure physical integrity and identity plus documentation compliance with the procurement requirements. For items not source inspected, specific receipt inspection measures such as material and dimensional checks against approved drawings and specifications and assurance that ASME Code Data Reports are received will be performed to verify compliance to procurement requirements. Evidence that material or equipment conforms to procurement requirements must be documented, retained and available at the site prior to use or installation. Part of this evidence

shall be in the form of acceptable documentation such as Certified Material Test Reports, Pressure Test Reports, Certificates of Conformance, etc. Documentation requirements will be delineated in the individual equipment specifications. The Station Construction Materials Receiving Coordinator or designee will be responsible for assuring that receiving inspection is completed where the Station Construction Department is responsible for the work; receipt acceptance approval will be by Quality Assurance or its designated agent. Where ASME Section III components and safety-related materials and equipment are received by the Station Stores Supervisor, Station Quality Control will be responsible for receiving inspection and the Quality Assurance Engineer or Inspector for Maintenance shall assure through audit and surveillance that the receiving inspection is complete and traceability is maintained. ASME Code material transferred from Stores or another CECo Station shall meet the requirements specified for the designated installation. Nonconforming equipment will be controlled. 10

7.5 Supplier Audit

Vendors of safety-related and/or ASME Section III items will be subjected to survey, audit or surveillance of their quality assurance system by CECo, or its agents, at intervals consistent with the importance to safety, complexity, and the quantity of the product or services being furnished in accordance with approved agenda and checklists to assure that the necessary manufacturing processes are being utilized and that quality controls are being maintained.

7.6 Spare Parts

Spare parts will be purchased to original or better design requirements. The applicable quality assurance requirements will be included in the procurement documents.

Spare parts and equipment from vendors will require documentation by equipment or part number for identification and traceability. Documentation for material will be in accordance with procurement order requirements. When the procurement order for ASME Section III components and safety-related spare parts, material, and equipment includes a specification or drawings, documentation will be received from the vendor which verifies conformance with those requirements.

The Station Stores Supervisor and Station Quality Control Supervisor are responsible for assuring that documentation for spare parts and equipment has been included as part of the shipment. The documentation for the purchased material, 10

equipment, and/or services, after being reviewed and accepted by the Quality Control Supervisor will be retained at the Station. |9

When required documentation is lacking for safety-related and/or ASME Section III components or spare parts, the Technical Staff Supervisor will verify that appropriate documentation is obtained or that suitable inspection and testing is performed to verify conformance to procurement requirements and that such items are treated as nonconformances. Receipt inspection of spare parts and equipment purchased to ASME Section III and safety-related requirements shall be accepted by the Station Quality Assurance Engineer or Inspector for Maintenance.

8. IDENTIFICATION AND CONTROL OF MATERIALS, PARTS AND COMPONENTS

A system of controls will be utilized to prevent the use of nonconforming items or items which have not received the required inspections and tests. Materials (including consumables), parts, and components including partially fabricated subassemblies will have their identity marked on the item or on tags and records traceable to the item. Identification assigned to materials, parts and components, including partially fabricated subassemblies, will be documented and maintained by the respective vendors, contractors or organizations having responsibility for the items involved throughout fabrication, installation or erection and use of the item and be verified as to being correct prior to release for fabrication, assembling, shipping or installation. The identification system for the Station will be established by the Station Nuclear Engineering Department with assistance from the Architect Engineer and Nuclear Steam Supply System vendor as needed, and consists of unique numbers assigned to pipes, instruments, valves and equipment. Also, stored spare parts and equipment will be assigned established Stores Item Numbers by the Production Stores Group. Quality Assurance will assure such identification and traceability is provided. 11 11 11

Assigned identification of materials, parts and components will be unique to the item. Identification will be on the item where practicable, and/or on records traceable to the item.

During fabrication, installation, erection and use of items, identification will be maintained traceable to the documentation of sub-components and/or materials when specified. Engineering review will establish that stamps, tags, or labels affixing identification to an item will not affect the properties or otherwise cause deterioration of the item and that stamps, tags and labels shall be made of material that will assure identification is not lost. The identification systems used by Commonwealth Edison Company, its contractors and major vendors for a nuclear generating station will be integrated to the extent necessary for uniformity.

The identity of items, components, equipment and systems generally will be applied during the design phase. The procurement of items and components will use this identity and it will be maintained during fabrication

performed by vendors. The receiving inspection, erection, repair and maintenance records of engineered items and components which are filed at the construction site or Station will be traceable to the engineering identity. Items and components which have not been subjected to required inspection and tests prior to receipt will be tagged or marked and controlled to preclude usage. Also, nonconforming items will be identified and controlled to preclude usage.

Stored replacement spare parts and equipment will be similarly identified by Stores Item Numbers during purchase, storage, and installation to assure required traceability to records and documents and to prevent their incorrect use. Part numbers are assigned by the Production Stores Group. The Station Stores Supervisor maintains parts, material, and equipment in storage traceable to quality assurance documents. 10

9. CONTROL OF SPECIAL PROCESSES

For some processes, the required level of quality defined in ASME Code and other applicable codes, standards and specifications cannot be assured by inspection of the item alone. For these processes, quality assurance is obtained through reliance on personnel qualification and procedural control in force as appropriate for the processes being employed for a specific task in connection with plant contract work, maintenance, repairs and modifications. The application of these controls is assured through audit/surveillance activities by CECo or its agent at vendor plants and/or at the site and by Edison Quality Assurance at the operating stations. The Edison Site Supervisor of Quality Assurance or Quality Assurance Coordinator and the Quality Assurance Engineer or Inspector at the operating station is responsible for assuring that records of qualified personnel are maintained by the contractor for work performed for Edison. These special and construction processes include welding, heat treating, concrete placement, coating, plating, material cleaning and bonding, chemical processes, certain nondestructive testing processes and such additional processes that may be identified in the contract, purchase order or maintenance or modification procedure, as the result of ASME Section III, Division 1 and Division 2 for concrete containment requirements and/or design review. 2

Procedures for the control of special processes will be maintained for components within the primary system pressure boundary and other safety-related items and ASME Section III designated components. These procedures will be in accordance with ASME and other applicable codes and specifications. When there is a specific reason to question whether the special process procedure or qualifications of personnel requirements are being met, the Authorized Nuclear Inspector may require requalification. 2 2

Process control procedures will be used as required by specifications, Code or standards, as applicable. Supplemental procedures will be prepared as necessary to provide detailed performance and methods for control of special processes and concrete placements for concrete containments. Process control procedures will specify the preparatory 2

steps, processing details, conditions to be maintained during the steps of process, inspection and test requirements and records requirements. Process control procedures of contractors and vendors will be submitted to Commonwealth Edison Company for review and evaluation in accordance with documented Commonwealth Edison Company procedures. Process control procedures will specify the methods of verifying the adequacy of processing materials, solutions, and equipment, including definitions of their associated control parameters. When the process is conducted in special environments, such as in vacuum or inert gases, the process control procedures will specify the requirements and methods for maintaining such environments.

The control and approval of sub-vendor Quality Assurance and Quality Control procedures are the responsibility of the specific vendor involved (included NSSS vendor).

Control procedures for nondestructive examination processes such as radiography, ultrasonic testing, liquid penetrant inspection, and magnetic particle inspection, will be used by Commonwealth Edison Company and their contractors and vendors to assure that the results provide accurate, uniform and reproducible indications of actual quality.

Commonwealth Edison Company and contractor and vendor personnel responsible for the performance and verification of special processes and the inspection of concrete placement involving concrete containments will be certified as required by specifications, ASME Code or other applicable codes and standards. Certification of personnel for such processes will include necessary training followed by an examination of each invividual. The period of validity for certifications shall be specified, and each individual shall be recertified at the end of such a period by retesting or by demonstruation of satisfactory performance. Personnel failing retest shall be removed from cperations pending requalification. Training, testing, and qualification of personnel shall be in accordance with criteria described in ASME Code, standards and specifications. 2

Process control records will provide objective evidence that special processes were performed in compliance with approved process control procedures by qualified personnel. Process records will specify the inspection and test data to be verified. Results of nondestructive examinations will be recorded in accordance with applicable specifications, codes and standards. These records will be retained by Commonwealth Edison Company or when the work is contracted, they will be retained by the vendor and then supplied to Commonwealth Edison Company as required by procurement documents.

During construction and assigned plant modifications, the responsibility for implementation of special and construction process procedures and qualification of such procedures and of personnel performing the work is that of Station Construction and shall be under the surveillance and audit control of the Supervisor of Quality Assurance or the Site Quality Assurance Coordinator.

During station operation, the Maintenance Assistant Superintendent assembles and maintains the qualified procedures used by station maintenance personnel or contractor. For ASME Code work, nondestructive examination procedures shall be approved by a CECo Level III person and the heat treating and welding procedures shall be reviewed and approved by Station Nuclear Engineering and approved by the Maintenance Manager and the Manager of Quality Assurance. Persons performing such special processes shall be qualified in accordance with the requirements of the Code and standards. Implementation of procedures during operations is by the Maintenance Assistant Superintendent or designee and, for the most part, cover those procedures included in the Special Process Procedures Manual. Completion of inspection, tests, audits and documentation is verified by the station quality control group and assured by the Station Quality Assurance Engineer or Inspector for Maintenance. 9 9

10. INSPECTION

Inspection Programs will be established to provide assurance that the quality control surveillance, inspections and tests defined in the applicable equipment and concrete containment specifications are performed. Quality Assurance inspection and testing will be conducted at vendor facilities, at the Site during construction, and at the Station during operation, maintenance and modification activities to verify conformance to applicable drawings, instructions, and procedures as necessary to verify quality. In addition, in-service inspection will be carried out in conformance with requirements of ASME Section XI. Inspection and test control points, to be witnessed by the Authorized Nuclear Inspector, and Commonwealth Edison Company or its representative, will be established as required to assure quality of items and effectiveness of the inspection programs. The individual performing inspections shall have the necessary qualifications and shall be independent of the individual directly responsible for performing the specific activity. Quality Assurance personnel will periodically review the inspection activities to establish their capability and to assure that required qualifications are met and kept current.

All equipment and material contracts with off-site vendors are administered by the Station Construction Department. Thus, under the inspection program administered and conducted by Site Station Construction Department of off-site vendors for purchased materials, an inspection and test plan will be prepared for purchased Code and safety-related procurements based on specified engineering requirements and the specific fabrication techniques and sequences to be used for such procurements. Approval of such a plan and approval as to the quality requirements being satisfied is the responsibility of the site Quality Assurance Supervisor or Coordinator and the Station Quality Assurance Engineer or Inspector. Inspections may take the form of source inspection, receiving inspection or both, depending on the nature, importance and quantity of the item(s) procured. Inspections will be performed to written procedures or checklists for inspections approved by Quality Assurance. Procurement documents shall contain provisions for Edison's right-of-access to vendors' and subvendors' facilities and records for source inspection and audit. 11

The NSSS Supplier will conduct inspections on items procured under the NSSS contract. This does not preclude Edison inspections of those same items.

The Edison Site Supervisor of Quality Assurance or Quality Assurance Coordinator will assure that surveillance of contractors' activities is performed in accordance with Quality Assurance approved surveillance procedures, and inspection and audit program and checklists. Edison establishes inspection notification points, including certain points designated by Quality Assurance which cannnot be waived by the Site Project Engineer without approval of Quality Assurance, which will be witnessed by Edison, or its designated agent. The applicable Edison site Supervisor of Quality Assurance or Quality Assurance Coordinator or station Quality Assurance Engineer or Inspector will assure that required inspection of purchased items as required and determined by Engineering is carried out, that inspection procedures, instructions or checklists specify the necessary measuring and test equipment including accuracy requirements, that contractor test procedures approved by Edison or the Architect Engineer are judiciously implemented and that procurement requirements are being fulfilled. In preparing an inspection notification point witnessing plan, Edison will take into account applicable codes, standards, specifications and contractor quality control procedures. The plan for each inspection will also identify, for example, the parameters to be checked, accept/reject criteria, equipment needed for the inspection or contractor documentation to be reviewed. Inspections associated with normal operation of the plant such as routine maintenance, surveillance and tests on safety-related mechanical and electrical equipment and systems is followed by functional or operational tests conducted in accordance with approved procedures by operations personnel. Acceptance criterion must be met before the equipment is declared operational.

Inspection and test plans shall be prepared by respective contractors, vendors or organizations having responsibility for the item(s) involved, either as a separate document identified with the parts, components or assemblies; or as an integral part of work instruction and procedure documents. Inspection and test plans shall consist of a flow chart, diagram or narrative description of the sequence of procurement, fabrication, processing, assembly, inspection and test activities and shall specify the inspection points.

The criteria for selection of testing methods will be based on those needed to verify design requirements. Sampling inspection methods may be used when tests are destructive or when the quality records and the inherent inspection characteristics of the item indicate that a reduction in inspection or testing can be achieved without jeopardizing the assurance of quality.

Sampling methods require prior approval of CECo or its representative as required by contract.

The importance, relative complexity, point of acceptance, and quantity of items will determine whether manufactured items will be inspected at source or upon receipt. Source inspection is to be utilized under the same criteria as source surveillance with the additional requirement that there are control points in the contractor/supplier's manufacturing plan which must be identified for notification to CECo or its agents prior to proceeding with manufacture. Items which have been inspected at source will also require sufficient receiving inspection to assure physical integrity and identity plus documentation compliance with the procurement requirements.

Certification of chemical and physical properties and laboratory verification of materials will be required when indicated by applicable codes and standards, by design requirements, or as stated in the procurement documents. In-process and final inspections and tests will be used to assure conformance to design requirements for fabrication and construction work.

Written procedures or checklists will be used to specify and verify final inspections and tests.

Changes to approved procedures will be documented and will be reviewed and approved by personnel with equivalent engineering and quality assurance technical competence as the personnel that established the procedure. Final Test procedures and associated changes involved in ASME Section III, Division 1 and Division 2, Class CC, when CECo has overall responsibility, will be submitted to the Authorized Nuclear Inspector for review and concurrence. 3

Inspection and test records will provide objective evidence that inspections and tests were performed in compliance with instructions and procedures to verify design and Code requirements. Inspection and test results will be recorded to show conformance with acceptance criteria and/or record and identify the cause of rejected items. Also, inspection and test records will identify the inspector or recorder.

Data and results will be distributed to personnel who require the information for review and/or retention.

Nonconforming items will be identified, segregated, and disposed of and appropriate corrective action(s) will be initiated.

Rework, repair, or replacement performed after completion of inspection tests will require reinspection and retest to the extent necessary to establish acceptability to the original criteria.

11. TEST CONTROL

Test programs will be established to assure that design and performance criteria have been satisfied. The test programs will include, as appropriate, procedures to evaluate structures, systems, subsystems and components. The program will include, as applicable, proof tests prior to installation, construction, preoperation, and start-up tests as required for a new plant and operational tests, as well as those tests applicable involving and following plant maintenance or modifications.

Appropriate testing is performed and documented by trained or appropriately qualified personnel to assure that applicable ASME Code and safety-related structures, systems and components perform satisfactorily in service.

The test program will consist essentially of four testing stages:

Vendor Proof Testing: Consists of source testing such as hydrostatic testing, seismic testing, performance testing and environmental testing as appropriate and as reflected in the specific procurement documents for a given item or items. Approved written procedures will be required for these tests and the test results will be evaluated. For items procured under the NSSS contract, the NSSS vendor will act as Edison's agent in this regard subject to inspection and audit by Edison or its designated agent. For non-NSSS items, the Architect Engineer may participate with Edison Engineering or act as Edison's agent in approving test procedures and data.

Construction Testing: Consists of on-site component testing such as hydrostatic testing, pressure proof testing, pump and valve testing, actuation to verify proper installation and electrical continuity verification. Written procedures or checklists will be employed and the status

of equipment both before and after testing will be documented. The various on-site service contractors will generally perform these tests. Control and management of the tests is the responsibility of the Edison Station Construction Department Project Engineer. The Supervisor of Quality Assurance or Quality Assurance Coordinator will be responsible for determining and assuring that proper calibrated inspection equipment is utilized, that equipment is properly released for testing, inspections and tests are done under suitable environmental conditions, that data documentation is in compliance with procedures and that retention control of test data documentation is adequate. The Authorized Inspector shall be notified of all ASME Code hydrostatic or pneumatic tests prior to conducting them to permit his witnessing of such tests.

Preoperational Testing: Consists of system performance tests performed prior to (or in some cases, after) core loading and are performed on completed or essentially completed systems. Preoperational tests which are performed on critical Safety Category I equipment, are controlled by approved written procedures and are evaluated in accordance with the Edison Quality Assurance Program. The Site Quality Assurance Supervisor or Coordinator will perform a final review of all Equipment Releases to assure that all comments and exceptions have been resolved and will sign the release for equipment turnover to operations. Also, Quality Assurance shall monitor such tests to assure they are performed properly and evaluated by the correct people.

Preoperational Testing is performed by the contractor or Edison station operating personnel.

Start-Up Testing: Consists of those single and multi-system tests occurring after fuel loading which are intended to demonstrate overall plant performance. These tests include the low-power physics tests and the power escalation testing program. Those tests essential to demonstration of safe operation will be conducted under a program having the same requirements as the formal preoperational tests. Nonsafety-related testing, if performed, will be controlled in a manner similar to component demonstration tests. Start-up tests will be performed by station operating personnel.

The start-up testing program commences at fuel loading and proceeds through several power level plateaus through 100% power. The Station Nuclear Engineering Department approves the start-up test procedures and data.

Start-up testing of systems is assigned to Technical Staff Engineers. They assure that the construction and preoperational tests are complete and that the start-up test procedures incorporate the requirements and acceptance criteria contained in the applicable design documents. The start-up procedures review assures the prerequisites have been met, adequate test instrumentation is available for use and the tests will be performed under suitable conditions.

After start-up test results are evaluated and accepted by the Station Nuclear Engineering Department, an acceptance statement is issued by that department. The Quality Assurance Supervisor or Coordinator assures that start-up test requirements are fulfilled. The Station Superintendent concurs with the acceptance statement and indicates satisfactory completion of start-up tests.

Modification testing requirements are specified by the cognizant Commonwealth Edison Company engineering department and or Technical Staff personnel and reviewed and accepted by Station Quality Control. Results from the tests are reviewed by the Technical Staff Supervisor and by the Operating Assistant Superintendent. The results are approved by the Station Superintendent. Test results which do do not agree with requirements shall be forwarded to the Station Nuclear Engineering Department for acceptance. 9

Required testing before equipment is returned to service is defined in the instrument and equipment maintenance work procedures. The acceptance of functional tests is assigned by the Operating Assistant Superintendent to the station operation or Technical Staff personnel. The Maintenance Assistant Superintendent and Quality Control Supervisor review and accept the maintenance records for completeness. The Quality Assurance Engineer or Inspector for Maintenance assures that all testing and documentation requirements are fulfilled. 9

Tests during operations other than routine surveillance tests are performed and documented as prescribed by the Technical Staff and Operating Assistant Superintendent to verify continued satisfactory performance of safety-related structures, systems and components. The test results are evaluated by the Technical Staff and station quality control personnel. 9

Written test procedures will be developed to demonstrate design and performance characteristics as specified in design and operating requirements. The procedures will include provisions for hold points to be established and for assuring that prerequisites have been completed and state the data to be obtained and requirements and acceptance limits to be fulfilled. Specifically, the Authorized Inspector shall have the opportunity to establish his hold points prior to the approval of the test procedures written for the tests required by the ASME Boiler and Pressure Vessel Code Section III or XI. The tests will be performed under the appropriate conditions using adequate, appropriate, approved and calibrated test equipment.

Data will be examined frequently as each test proceeds, and out-of-tolerance conditions will be recorded and described in adequate detail to permit post-test analysis.

Test results will be evaluated following each test to assure conformance with design and performance requirements. The evaluation will determine the following:

1. That the appropriate test procedure was used.

2. That the data displays the adequacy of the equipment to meet the specified requirements.

3. That nonconforming or incident conditions, if applicable, are reported and corrected.

Test records will include data sheets completed during the tests and a list of those instruments used for calibrating equipment. The data sheets will have provisions for identifying the person responsible for conducting the test and the date or period when the test was performed.

The original test records shall be reviewed for completeness, identified, and indexed to establish them as a part of a permanent record to be retained.

12.0 CONTROL OF MEASURING AND TEST EQUIPMENT

12.1 GENERAL

Measuring and test equipment which is used to determine the acceptability of materials, parts, components, fabricated items, and completed construction assemblies, and to perform the pre-operational testing and to ascertain the proper indications in the operation of generating station equipment will be periodically calibrated or adjusted to assure that accuracy is maintained within necessary limits in order to verify design requirements. Such measuring and test equipment will be calibrated against standards in accordance with approved procedures having tolerance not greater than one-fourth the tolerance of the measuring and test equipment being calibrated. In situations where it is impractical to comply with the above, a standard of greater than one-fourth the tolerance but equal to or closer than the tolerance of the measurement and test equipment described will be used with proper documentation and approval. 11

Inspection, measuring and test equipment will be adjusted and calibrated using documented procedures at scheduled intervals against certified standards having known valid relationships to recognized standards. Such procedures will provide criteria for determining the accuracy requirements of test equipment and criteria for determining when a test is required or how and when testing activities are performed. Calibration intervals for items will be based upon the type of equipment, accuracy, use and other conditions affecting measurement control. 11

Commonwealth Edison or its contractors and vendors, may provide calibrations of measuring and test equipment, or use the services of an approved calibration laboratory. In either case, approved standard procedures will be used for calibration work. Standards will be maintained and used in an environment with temperature, humidity and cleanliness controls compatible with maintaining accuracy and operating characteristics of the standards.

History records for measuring and test equipment will be used to indicate calibration status, condition, correction to be applied and repair events.

Traceability records will be maintained in the System Operational Analysis Department for nonradioactive certified standards to show that calibrations are traceable to recognized national standards. Also, records will be maintained in the Operational Analysis Department for company standards as well as calibration records for inspection, measuring and test equipment. If no national standards exist, the basis for calibration will be documented. Further, the construction site or Station shall maintain necessary calibration records and status and identification tagging. Reputable commercial calibration laboratories shall be employed when needed and their standards will be traceable to recognized national standards.

12.2 EQUIPMENT CONTROL

The basic control measures employed for measuring and test equipment consists of periodic calibration using appropriate standards and documented procedures. The control includes documentation and recording of calibrations, tagging or equivalent methods to show calibration status, and, when necessary, written procedures for the use of equipment. For each piece of test and measurement equipment, the date of last calibration, the calibration data, and the due date of next calibration shall accompany the piece of equipment at the time of calibration and shall remain with the equipment until the next calibration. These items shall be identified by use of tags or stickers. Commonwealth Edison Company will investigate the consequences of previous uses of test and measurement equipment and take corrective action if calibration shows the accuracy of any equipment to be outside the specified accuracy limit. The Station Maintenance Department (or cognizant Station Construction Engineer during construction) will be notified for immediate corrective action. Written procedures appropriate to the item(s) of measuring and test equipment involved will be used to specify preoperations checks, environmental requirements, step-wise instructions for use, and instructions for shut-down and layaway. Suppliers and contractors to Commonwealth Edison Company are required to have and employ similiar appropriate control measures which Commonwealth Edison Company will assure through surveillance, audit and approval of contractor procedures.

The Operational Analysis Department will be responsible for calibration and maintenance of Commonwealth Edison Company measuring and test equipment. Assistance in this activity will be obtained from vendors or laboratories who have the necessary capabilities.

The Master Instrument Mechanic is responsible for the calibration and control of station instrumentation and for the accuracy of tools, gauges, instruments and other devices used in measuring and testing such instrumentation as well as documentation of such calibration and control. The Maintenance Assistant Superintendent similarly is responsible for the calibration and control of tools, gauges and instruments used in maintenance activities. To maintain accuracy within necessary limits, the measuring and test equipment used in activities affecting quality is periodically calibrated and adjusted in accordance with Quality Procedures for test equipment and system instrumentation. 9

All pressure test gauges used in ASME pressure testing shall be calibrated against a standard dead weight tester or a calibrated master gauge prior to each test or series of tests.

Charpy V Notch testing machines shall be calibrated at least once each year in accordance with ASTM-E-23-72 and employing standard specimens obtained from the U.S. Army Materials and Mechanics Research Center. The associated temperature instruments shall be calibrated at least once in three month intervals.

The Master Instrument Mechanic and Maintenance Assistant Superintendent develop a master list of equipment to be calibrated. For each piece of equipment on the list, the Master Instrument Mechanic, Maintenance Assistant Superintendent or Operational Analysis Department or their contractors maintains the primary standards used in the calibration of the equipment; calibrates the equipment; maintains records traceable to the instruments, tools and gauges showing the date of the last calibration, the calibration data and the due date of the next calibration; and provides records of calibration data for the Station files. 9

The Master Instrument Mechanic performs the instrument surveillance testing as required by the Technical Specifications to assure the accuracy of station process instrumentation in accordance with Instrumentation Procedures.

Instrumentation Procedures and documentation are established per the Instrumentation Procedures of the Station Procedures Manual.

13.0 HANDLING, STORAGE AND SHIPPING

Written instructions for handling, preservation, storage and shipping will be used to specify special protective conditions necessary to prevent damage or deterioration of materials and equipment. The requirements needed to provide adequate receipt of material and equipment are established by Engineering in the equipment specifications or vendor instructions.

Special handling instructions will be provided for items that are susceptible to handling damage. During fabrication, processing, construction, modifications, or installation, special carts, cranes, boxes, containers, and transportation vehicles will be utilized as necessary to prevent damage due to handling. Construction, installation, and test sites will be provided copies of special handling instructions as appropriate.

Instructions for preservation will be provided for items subject to deterioration or damage through exposure to air, moisture, or other environments during fabrication, processing, assembly, and interim storage periods. Items will be cleaned and preserved by such methods as required to preclude deterioration. Items subject to damage will be packaged in a manner and with such materials as required to prevent damage. When maintenance of specific internal or external environments are necessary, these will be included in special packaging instructions.

For items which are required to be stored for long periods of time or require special protection, storage instructions will specify special protective environments necessary to prevent deterioration and damage. Instructions will provide for adequate safety, maintenance of preservation, special protective environments such as inert gas atomsphere and humidity and temperature control, periodic inspection, and periodic accountability.

Vendor's Quality Program will include shipping procedures which will provide for inspection and control of items leaving the supplier's plant to assure the following:

a. Items have been subjected to and have satisfactorily passed applicable inspections and tests.

b. Items are complete and assembled as required.

c. Items have been preserved and packaged in accordance with applicable procedures and contract requirements.

d. Packaged items have been identified and marked in accordance with applicable procedures and specifications.

e. In the absence of packing and marking requirements in the contract or subcontract, the packing and marking of items will be such as to be readily identifiable at destination.

f. Items shipped from a vendor will be accompanied with necessary shipping documents including special handling and storage instructions, if required.

During construction, the Station Construction and Quality Assurance groups shall provide surveillance and audit of on-site receipt handling and storage of material and equipment. The Station Construction Department, however, shall have prime responsibility for this activity. The primary documents for controlling, handling, storage and shipping of items are approved written instructions or procedures which delineate acceptable techniques and necessary qualifications and precautions. A storage plan is established by Station Construction at each site utilizing information provided by the Engineering Department Engineer and Contractor. After licensing, the assigned Station Construction Department Engineer, when performing plant modifications, will provide surveillance of handling, storage and receipt of material and equipment for plant modification. Inspections and audits are conducted to verify compliance with the plan or procedures and other requirements by the Site Quality Assurance Supervisor or Coordinator. The Station Construction Department Field Engineer provides surveillance of the field activities of assigned contractors to verify the application of such instructions to the equipment. When required by the terms of the purchase order, the supplier providing the spare parts, material and equipment for the Station, also provides instructions for the special handling, storage, shipping, cleaning or preservation of such items to prevent damage or deterioration. Items received at the station will be inspected for evidence of damage during transit. Storage

areas and facilities are provided to assure protection of stored items. The Station Stores Supervisor controls such special handling and storage of station and other assigned spare parts, material and equipment in accordance with supplier instructions. Also, storage of chemicals, reagents (including control of shelf-life), lubricants, and other consumable materials is controlled. Procedures and instructions to protect nuclear fuel are provided as part of the Station Procedures Manual for use by the Fuel Handling Foreman and the Nuclear Materials Custodian. | 11

14. INSPECTION, TEST AND OPERATING STATUS

The measures used to indicate the status involve two phases. The first phase is pre-receipt controls used to insure that all requisite tests and inspections scheduled to be performed at a vendor's shop have been made. The controls applied to this phase consist of vendor progress reports, inspection notification points and quality release documents which accompany the item to the site or station. The second phase consists of on-site controls and identification of status on-site or at the station. These controls consist of documented receipt inspections and item tagging to indicate nonconforming status during construction and operation phases of the nuclear generating station. This system of control will provide for the identification of items which have satisfactorily met required inspections and tests prior to arrival at the construction site. This system will also provide for indicating the quality or operating status during construction and plant operations. Marking, tags, labels, forms, log books or other suitable means are used to identify the operating status of parts and equipment to preclude inadvertent bypassing of the inspections and tests required prior to their use.

The operation status of station equipment is under control of the Shift Engineer. The inspection and testing status is under control of the cognizant Organization Head (i.e., maintenance - Maintenance Assistant Superintendent; stores - Storekeeper; etc.). The Equipment Outage Book is maintained by the Shift Engineer to identify the operating status of station equipment taken out-of-service. A Quality Procedure describes the use of the Equipment Outage Book to assure correct identification of equipment removed from service. 19

Material Receiving and Inspection report forms will be used to indicate the physical condition and conformance to specification. Inspection and test status during construction will be indicated by logs and test

records. Nonconforming material and equipment will be identified through the use of a Quality Assurance "Hold" tag. Unacceptable material will be identified with a Quality Assurance "Reject" tag. Such "Hold" and "Reject" tags shall only be removed at the direction of Quality Assurance personnel. Operating out-of-service status is controlled by Edison "Hold" and "Out-Of'Service" cards depending on the designated internal jurisdiction of the item. The methods of control are provided through Construction and Station Operating Procedures which describe the use of forms, tags and logging methods.

The report documents the deviation and provides a record from which to establish a trend in the operation. Such reports are distributed to the Division Manager-Nuclear Stations, the Operating Assistant Superintendent, Technical Staff Supervisor and Manager of Quality Assurance. The Maintenance and Master Instrument Mechanic receive a copy of the deviation report if maintenance or instrumentation work is involved in the correction of the deviation. 9

Reports involving significant reactor safety considerations are reviewed with the Division Manager-Nuclear Stations and then forwarded to other executive management. Such deviations will be reported to the Nuclear Regulatory Commission as required by the Technical Specifications.

During construction and plant modification, the Station Nuclear Engineering Department Project Engineer has responsibility for resolution of nonconformances and such resolution will be approved by the Site Quality Assurance Supervisor or Coordinator or by a station Quality Assurance Engineer or Inspector.

Nonconformance to system operation and technical specification requirements will be resolved through actions by the Operating Assistant Superintendent with the approval of the Station Superintendent. 9

15. NONCONFORMING MATERIALS, PARTS OR COMPONENTS AND OPERATIONS | 2

Items involving construction, maintenance and modifications which are found nonconforming to the engineering requirements or specifications, drawings and instructions for modifications or workmanship standards or which are lacking required documentation upon receipt will be controlled to prevent their inadvertent use or installation. Nonconforming items are identified, documented and segregated for disposition.

Technical evaluation will be performed by qualified personnel to determine whether a nonconforming item may be accepted "as-is" repaired to an acceptable condition, or whether the item must be rejected. Items may be reworked to conform with design and/or specification requirements without technical evaluation. When items are accepted "as-is," technical evaluation will be performed to assure that the final condition of conconforming items will not adversely affect safety, Code requirements, operability or maintainability of the items, or of the component or system in which it is installed. Where ASME Code requirements are involved, disposition acceptance by the Authorized Nuclear Inspector shall be required. | 2

Nonconforming items accepted "as-is," or reworked to an acceptable condition shall be identified through documentation records and in a manner that will establish the condition as installed. When the responsible CECo personnel authorizes acceptance of the item "as-is," or rework of the nonconforming item, the action will be documented. Such action involving vendor product prior to shipment to the site will be identified in shipping documents or certificates of conformance and reviewed and approved by the Site Quality Assurance or Coordinator or the Quality Assurance Inspector for Maintenance to assure that nonconformance has been resolved and corrective action completed.

Rejected items shall be identified by tagging and immediately removed from construction or installation areas (unless physical size prohibits this) and segrgated in a controlled area to prevent its uncontrolled use or installation.

Commonwealth Edison Company will make a technical evaluation of pertinent data relating to the nonconformity, including the cause, where known, and corrective action either taken or planned to prevent recurrence. Also, items which are found to contain defects which could create a substantial safety hazard will be reported in accordance with the provisions of 10CFR Part 21 and as provided in implementing procedures.

Construction deficiencies involving material or equipment are documented and reported to the Nuclear Regulatory Commission and to Commonwealth executive management. The Station Construction Department Project Superintendent or Engineer is responsible for this reporting.

The Station Superintendent is responsible for investigating and reporting operating occurrences. An Investigative Report is prepared for occurrences or departures from the safety limits prescribed in the Station Technical Specifications. Occurrences and departures from the safety limits are documented and reported to the NRC as required by the Technical Specifications.

The Station Superintendent appoints personnel to investigate the occurrence and issue an Investigative Report in accordance with the Technical Specifications and a Quality Procedure. This report is distributed to the Divison Manager-Nuclear Stations and Superintendents-Nuclear Stations. Reports of occurrences that result in significant damage or have significant safety implications are reviewed with the Vice President of Production and then forwarded to the executive management.

The appointed personnel are responsible for determining the cause of the occurrence, developing recommendations intended to preclude recurrence and issuing a report which shall include: a detailed description of the occurrence, the findings and recommended measures for corrective action.

When deviation from accepted normal operation of a reactor and its associated equipment occurs, or when a reactor scram occurs (other than those associated with a reportable occurrence), the Station Technical Staff investigates the deviation and issues a Deviation Report covering the nature of the deviation (e.g., process difficulty, equipment inadequacy, procedure inadequacy), its cause, the hazard or potential hazard to operations and recommendations for corrective action.

16.0 CORRECTIVE ACTION

A corrective action system will be used to assure that such items as failures, malfunctions, deficiencies, deviations, defective material and equipment and nonconformances which are adverse to quality and might affect the safe operation of a nuclear generating station are promptly identified and corrected.

Corrective action measures for nonconformances are included in the design, source fabrication and on-site construction, erection and operational phases. Corrective action measures involving design will be processed as design change requests. Corrective action measures in the source fabrication phase are required in the quality assurance programs of individual vendors including the NSSS Supplier.

For the Engineering-Construction phase and modifications undertaken by Station Construction, on-site corrective action measures shall consist of a program for: (1) reporting nonconformances to Engineering by Station Construction: (2) recording noncomformance reports (NCR's) in a log for follow-up by Quality Assurance as to resolution and satisfactory completion; (3) prompt resolution and approval of corrective actions by Engineering; (4) assurance by Station Construction that the corrective action has been taken; (5) sign-off approval and close-out of NCR's by Site Quality Assurance that satisfactory corrective action has been taken: and (6) issuance by Engineering of monthly reports indicating the status of all NCR's submitted for resolution.

Implementation of corrective action will be accomplished at the source of deficiency by appropriate contractor personnel as directed by cognizant Edison engineers. Station Construction has responsibility for implementation of the correction. Quality Assurance is responsible for follow-up and final approval that the nonconformances have been corrected satsifactorily.

For corrective action nonconformances, the Edison Site Quality Assurance Supervisor or Coordinator will establish and maintain a Nonconformance Report (NCR) Station Log to monitor the prompt resolution and closing of all NCR's plus maintain a file of all NCR's or equivalent documents that are submitted by the site for CECo resolution and approval.

The cumulative monthly deviation report, which indicates the NCR number, deviation description and resolution, such as reject, replace, use-as-is or repair, approval status, date of resolution and whether corrective action is completed, is distributed to involved corporate and line management for information, review and possible action. Significant nonconformances are brought to the attention of corporate management for action where satisfactory resolution cannot be achieved by Engineering with a contractor.

For Operations, corrective action identified from nonconformances, incidents and deviations, trend studies and audits are verified for satisfactory completion to preclude repetition.

When corrective action is required to correct nonconformance to Code requirements, such corrective action shall be made available to the Authorized Inspector. Any revisions to Travelers involved with corrective action related to nonconformance for Station modifications shall be reviewed with the Authorized Inspector for his review and insertion of hold points.

This system will provide follow-up to assure that corrective measures are effectively implemented. Also, significant conditions and nonconforming items will be reported to the appropriate levels of management.

The Technical Staff Supervisor verifies completion of corrective actions for maintenance, repair, refueling and operation activities. The Station Quality Assurance Engineers or Inspector for maintenance and operating issue reports indicating the status of corrective action in progress. These reports are routed to the Division Manager-Nuclear Stations and the Manager of Quality Assurance and reviewed to assure prompt implementation of the corrective action.

Site contractors and off-site vendors will be require required to follow-up on corrective action commitments within their quality program. The Supervisor of Quality Assurance or the site Quality Assurance Coordinator will be responsible for surveillance of site corrective action. The Station Nuclear Engineering Department Project Engineer is responsible for assuring that review and evaluation

of nonconformance reports are carried out to determine the need of corrective action.

Required corrective action during Station operation which is due to equipment malfunctions and/or abnormal occurrences will be incorporated into the Station maintenance and operating procedures in a timely manner to preclude repetition. The responsible Quality Assurance Engineer or Inspector assigned to the Station verifies and approves the completion of corrective actions by the Station. Deficiencies in implementing corrective actions will be brought to the attention of appropriate management levels for resolution.

17. QUALITY ASSURANCE RECORDS

Quality Assurance records will be maintained either by Edison or by an agent of Edison, under Edison's control. The location, means of identification, duration of retention and means of retrieval will vary depending on the nature of the individual records.

Quality Assurance records will be stored in a predetermined location as necessary to meet the requirements of applicable standards, codes and regulatory agencies. The storage location or facility shall be adequate for the maintenance, preservation and protection of the Quality Assurance record files from the time of receipt until their ultimate disposal.

Fabrication and construction documentation is generated by contractors and vendors for Commonwealth Edison Company, and will be available at the construction site or as directed by procurement documents. When records are stored at locations other than the site, a record will be maintained at the site to identify these records and their location (e.g., NSSS equipment documentation). Records generated during site construction, testing, operations and plant modifications will be available at the Station. Upon completion of construction records will be turned over to the Station for retention for the life of the plant.

Station Quality Assurance records are retained and maintained by the Station personnel in accordance with written station procedures and regulatory and national Standard requirements. The methods of storage, preservation and safekeeping of the records are selected to minimize damage, deterioration or loss. Quality Assurance records are identifiable and retrievable. These records include items which are related to the safe operation of the Station; which document the as-built requirements of equipment and systems for use in maintaining, reworking, repairing or modifying station equipment which can assist in determining the cause of a malfunction of an item that provides protection to the health and safety of the public; and which provide inspection data for in-service inspection.

The lifetime quality assurance records are those continually maintained for the operating life of a particular ASME Code and safety-related item or component while it is installed in the Station or stored for future use. Records to be kept as required by ASME Code for the life of the plant shall be designated. ASME Section III records including audit reports are retained initially to show evidence that an activity was performed in accordance with applicable requirements. These records need not be retained for the operating life of the item. However, for ASME Class 1, CS and CC items such records shall be maintained for a period of five years, but not less than two years after commercial operation of the nuclear power plant at a place as mutually agreed upon with the manufacturer or installer.

The Director of Quality Assurance (Engineering-Construction) will be responsible for assuring records are retained by Station Construction during engineering and construction. Following start-up, the Station Superintendent will be responsible for the retention of station operating, maintenance and modification records for the life of the plant or for the period of time established by Commonwealth Edison Company Procedures.

Records retained shall be identifiable and retrievable.

The certified design specification and a copy of acceptance verification for the design reports for safety-related and ASME Section III Division 1 items and the certified design and construction specifications, and certified design and construction reports for ASME Division 2, Concrete Containment, will become part of the permanent records file to be retained for the life of the item or the life of the plant, at the plant site, the manufacturing plant, the Architect Engineer or other designated locations.

The Station Nuclear Engineering Manager shall be responsible for completing applicable Data Reports where CECo assumes overall responsibility including ASME FORM N-3 OWNERS' DATA REPORT FOR NUCLEAR POWER PLANT COMPONENTS. He shall certify by signing jointly with the Authorized Nuclear Inspector the form that each organization was a holder of the appropriate Certificate of Authorization and that components and appurtenances and installation welds comply with the applicable requirements of ASME Section III, Division 1 and Division 2 Concrete Containment requirements.

Files shall be maintained current, complete and available for audit by Commonwealth Edison Company or its agents, the Nuclear Regulatory Commission and the Authorized Inspector at any reasonable time during the retention period. Contractors and suppliers shall retain their quality records as required by applicable codes, standards and contract requirements. At the end of the required retention period, the contractor or supplier shall transfer these records to the Commonwealth Edison Company Station Construction Project Superintendent or Engineer for transfer to the Station Superintendent for filing for the life of the plant. In no case will the file be destroyed by the contractor or vendor without written instruction by Commonwealth Edison.

Audits will be conducted by qualified personnel who are familiar with written procedures, standards and processes applicable to the area being audited, but who do not have direct responsibilities in the areas being audited.

A report shall be written for each audit. An audit report package consisting of a Summary Sheet, Attachment Sheet, Checklists or Agenda and any additional pertinent details recorded on additional sheets necessary to support a finding(s) will be on file. The audit report shall be sent, as applicable, to the Executive Vice Presidents, Vice President of Engineering, Vice President of Nuclear Operations, Manager of Station Construction, the Station Nuclear Engineering Manager, Manager of Quality Assurance and the Directors of Quality Assurance and Division Manager-Nuclear Stations for management review and action. The above stated system audits are also sent to the Vice Chairman for review and evaluation and action as deemed necessary. Also, bi-weekly to bi-monthly periodic reports on quality assurance activities are submitted to top management. Such reports, in part, provide bases for periodic top management reviews and discussions of quality assurance activities, implementation status and effectiveness. Such reviews and discussions are held by the Vice Chairman with the Manager of Quality Assurance and with other executives. 12 12 12

There shall be follow-up review of deficient areas or adverse conditions and follow-up on corrective action commitments to assure effective implementation has been carried out.

Deficiencies in the execution or implementation of corrective action will be brought to the attention of the person who is responsible in the area involved. Continued deficiencies, or failure to implement corrective action will be reported in writing to appropriate executives within Commonwealth Edison Company.

18. AUDITS

Audits will be performed by Commonwealth Edison Company and/or its contractors, subcontractors and vendors to verify the implementation and effectiveness of quality programs under their cognizance. The number and experience of persons participating in audits will vary according to the nature and significance of the audit.

Audits under the responsibility of the Manager of Quality Assurance will cover quality systems for engineering, construction, modifications, maintenance, in-service inspection and Stores activities. Audits will be performed to evaluate the implementation of the quality assurance programs and the adherence to procedures and controls. Certifications and records will also be evaluated. Product audits assess the effectiveness of inspections and tests that are specific to the fabrication, installation, construction, testing and operation of an item.

The performance and compliance of each operating station to the Quality Assurance Program is assured through surveillance of operations by the Quality Assurance Engineer or Inspector who is responsible to the Director of Quality Assurance (Operating) and through review, surveillance and audit of maintenance, modifications, Stores activities and in-service inspection by the Quality Assurance Engineer or Inspector for maintenance who is responsible to the Quality Assurance Supervisor (Maintenance). 10

Audits will be conducted using checklists or an agenda approved by responsible Quality Assurance Department personnel and will be conducted to evaluate compliance with all aspects of the Quality Assurance Program. Audits will be initiated early to assure effective quality assurance during design, procurement, manufacturing, construction and installation, inspection and test and be performed efficiently in order to achieve a minimum of interference with work in progress and minimum

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disruption of organizations being audited. An audit plan will be maintained in order to schedule audits of site contractors. Audits of off-site contractors generally will be conducted in conjunction with plant visits for witnessing inspection points. Also, periodically Quality Assurance will participate in such audits or perform independent audits to assure effectiveness of the program, compliance to the program and fulfillment of procurement requirements.

The elements in the quality program, in procurement documents and in related codes and standards, are subject to systems audits. Also, items received, fabricated and constructed or installed for use by Commonwealth Edison Company in its nuclear power plants are subject to audits.

Audits will be performed selectively at various stages of contracts on a varying frequency, based on the nature and safety significance of the work being done to verify compliance and determine the effectiveness of procedures, inspections, tests, process controls and documentation. In addition to these audits, Quality Assurance will conduct approximately annually, overall system audits of the NSSS vendor, the Architect Engineer and involved Edison Departments. Audits of CECo are also performed by the Authorized Inspection Agency as required by the ANSI N626 series of Standards.

For operating stations, periodic Quality Assurance Department audits will be performed to verify compliance with, and the effectiveness of the program. Audits covering operating will be performed in accordance with the Technical Specifications under the direction and responsibility of the Director of Quality Assurance (Operating) independent of the Production Department. Surveillance, review and audits covering maintenance, modifications, in-service inspection and Stores activities will be performed under the direction and responsibility of the Quality Assurance Supervisor (Maintenance). Audit results and recommendations of corrective action will be documented and reviewed with the management of the Station. Verification of the completion of corrective action recommended in audit reports will be performed by the Technical Staff Supervisor. Follow-up of open station items is tracked by the Action Item Record's (AIR) System. Approval as to satisfactory completion of corrective action shall be obtained from the responsible station Quality Assurance Engineer or Inspector.

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