

SNUPPS

Standardized Nuclear Unit
Power Plant System

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Nicholas A. Petrick
Executive Director

November 1, 1979

SLNRC 79- 18 FILE: 0278.10
SUBJ: IE Bulletin 79-14: Seismic
Analysis for As-Built Safety-
Related Piping Systems

Mr. Boyce Grier
Director, Region I
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406

Docket Nos: STN 50-482, STN 50-483, STN 50-485, STN 50-486

Dear Mr. Grier:

This letter is submitted as a generic response to the subject IE Bulletin for the SNUPPS Utilities, Kansas Gas and Electric Company, Union Electric Company and Rochester Gas and Electric Corporation.

Engineering, construction and quality assurance practices in effect on the SNUPPS Project will assure that the seismic analysis input information conforms to the actual "as-built" configuration of safety-related systems. These practices are described briefly in Enclosure 1, Generic SNUPPS Program for Implementation of IE Bulletin 79-14. The enclosed program description outlines the phases of piping design and erection and indicates the controls and procedures to be employed throughout the project to assure that the final seismic stress analyses accurately and completely reflect the as-constructed SNUPPS configurations. The SNUPPS plants are currently in Phases I, II and III of activity described in Enclosure 1. Details concerning the Phase IV final walkdown are being developed and will be implemented in a timeframe consistent with the start of hot functional testing. The combination of existing Phase I, II, III practices together with plans for the Phase IV final walkdown will assure compliance with the Bulletin's requirements.

Additional information requested by the subject Bulletin is provided as follows:

- (a) Enclosure 2 is a list of safety-related piping systems.
- (b) Enclosure 3 is a list of piping isometrics and/or drawings.
- (c) Enclosure 4 is a list of pipe support drawing indices.

1599 156

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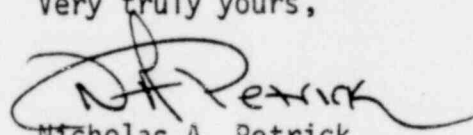
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November 1, 1979

The above lists are current as of this date. These lists are continuously revised throughout the design and construction process and will represent the final plant systems configuration. The inspection data requested by the subject bulletin is being and will continue to be generated as installation and erection progresses. These data will be retained at the SNUPPS jobsites and will be available for NRC examination and audit.

If you have any questions on this matter, please contact either the undersigned or Mr. S. J. Seiken of my Staff.

Very truly yours,



Nicholas A. Petrick

SJS:dck

Enclosures

cc: Mr. Victor Stello, Jr., Director, Office of Inspection and
Enforcement, USNRC, Washington, D.C.
Mr. James G. Keppler, Director, Region III, USNRC.
Mr. Karl V. Seyfrit, Director, Region IV, USNRC.

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ENCLOSURE 1

GENERIC SNUPPS PROGRAM
FOR
IMPLEMENTATION OF IE BULLETIN 79-14

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SECTION 1. INTRODUCTION

1. IE Bulletin 79-14

IE Bulletin 79-14, Seismic Analysis for As-Built Safety-Related Piping Systems, was issued July 2, 1979. Revision 1 to the bulletin was issued July 18, 1979. A supplement to the bulletin was issued August 15, 1979. Supplement 2 to the bulletin was issued September 7, 1979.

This bulletin addresses the concern which was raised when inspection of certain operating plants disclosed that installed piping systems including the supports were not in conformance with design documents. The specific concern is that deviations between the design documents, used as input information to the seismic design of the piping systems, and the as-built conditions could potentially impact the validity of the seismic piping analysis.

In order to assure that the seismic piping analyses are still valid, the bulletin requires each plant in operation or under construction to inspect safety-related/Seismic Category I systems, and compare the as-built installation with the design documents which were used as inputs to the seismic analysis. Where significant deviations are discovered, the bulletin requires that they be resolved either by reanalysis or by modifications to the piping systems or their supports.

1599 160

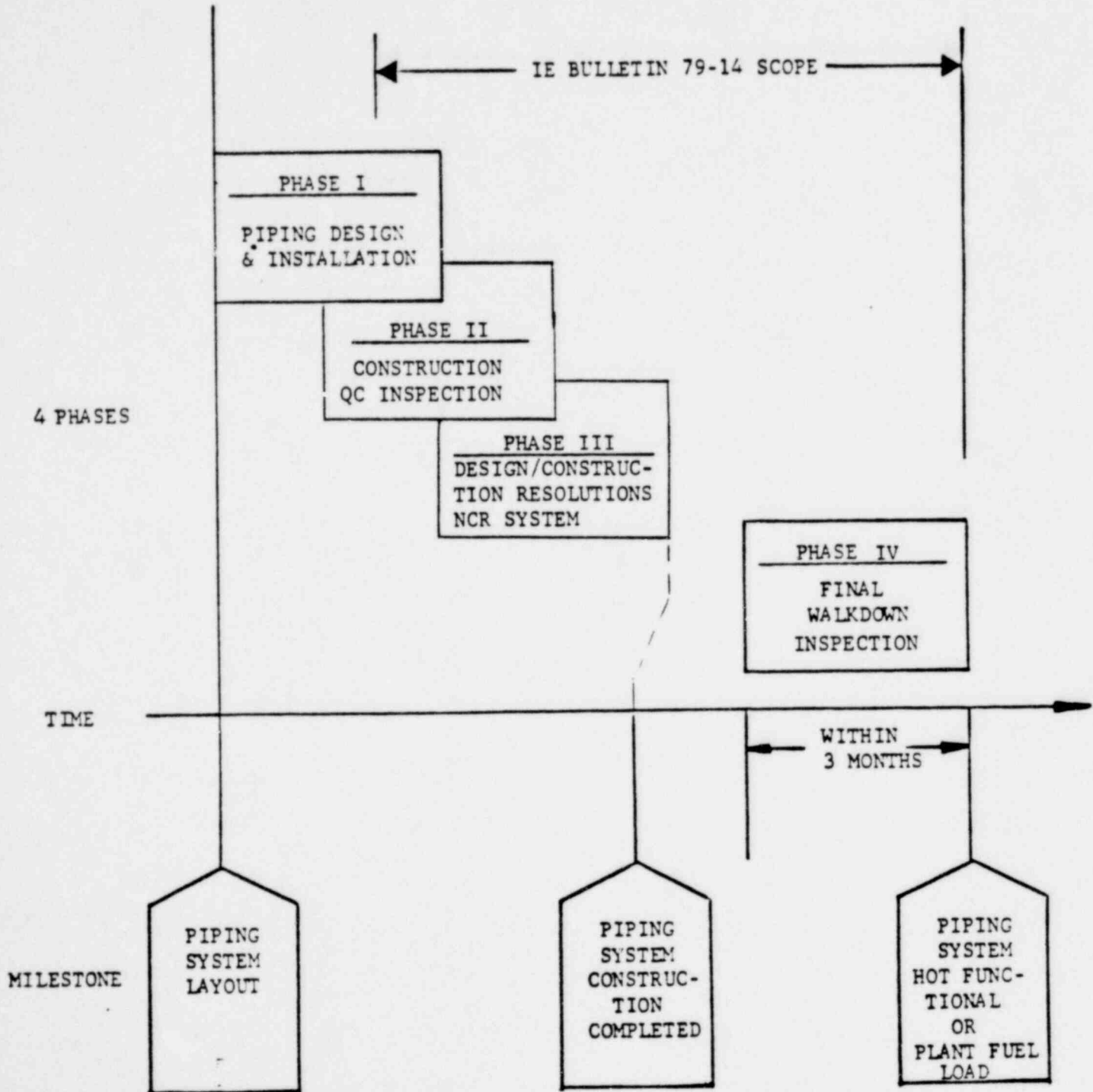
SECTION 2. FOUR PHASES OF PIPING DESIGN AND CONSTRUCTION

There are four specific phases in piping design and construction (refer to Figure 1) related to verification of seismic analyses. These include:

- 2.1 Phase I - Piping layout, stress analysis, pipe support design, fabrication and installation.
- 2.2 Phase II - Construction QC inspection performed in-process and prior to systems turnover and owner acceptance. Included in these inspections are verification of pipe run geometry; installation of supports and attachments; embedment installation; piping system weldments; valve and operator orientations; penetration installation and piping systems clearances. Inspection characteristics, scope of examination, acceptance criteria and measurement tolerances are provided in site construction procedures.
- 2.3 Phase III - Resolution of all non-conformances from the requirements of applicable design drawings and specifications including referenced codes and standards. Phase III is a continuing process performed in conjunction with the Phase II QC inspection activity. At the end of Phase III, all "as-built" conditions will have been accepted or reanalyzed by the designer and, where required, incorporated in the design documents as "as-builts".
- 2.4 Phase IV - Final piping and support walkdown inspection prior to hot functional testing to ensure that the piping systems will behave as designed, and will move free from interferences during operation. This walkdown inspection is intended to supplement the Phase II QC construction inspection program.

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DESIGN AND CONSTRUCTION PHASES OF A
TYPICAL PIPING SYSTEM



1599 162

FIGURE 1 (REFER TO SECTION 2)

SECTION 3. PHASE I - PIPING DESIGN AND INSTALLATION

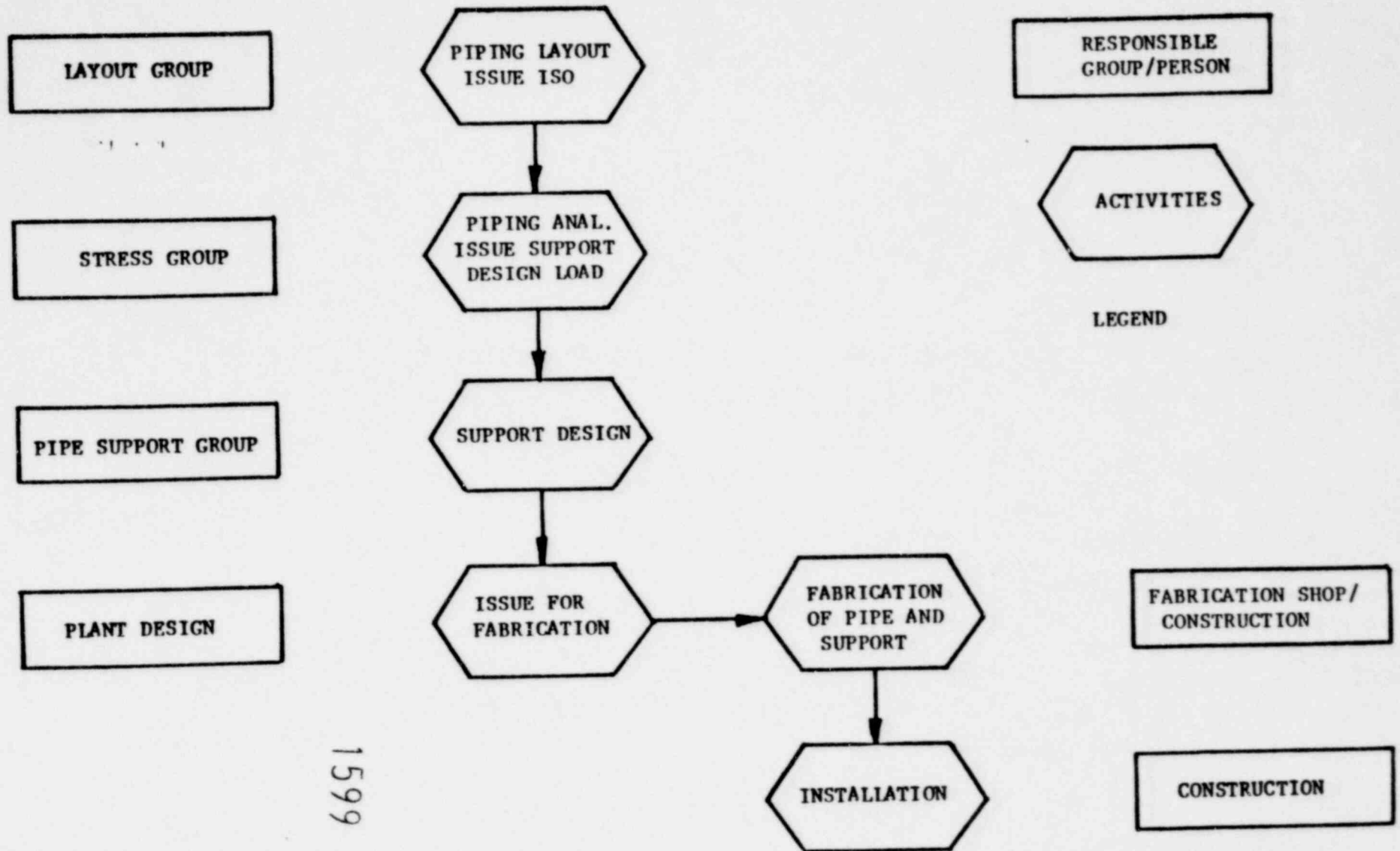
Phase I extends from piping layout to installation. Briefly, the work includes the following tasks:

- 3.1 Piping layout and issuance of piping isometric drawing (by Layout Group).
- 3.2 Piping stress analysis and issuance of pipe support Design Guides (by Stress Group).
- 3.3 Pipe support design (by Pipe Support Group).
- 3.4 Issuance of drawings for piping and support fabrication (by Plant Design Supervisor).
- 3.5 Piping and support fabrication (by Fabrication Shop and Constructor).
- 3.6 Piping and support installation (by Constructor).

The sequence of design and construction is diagramed in Figure 2. Each step is performed in accordance with project procedures.

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PHASE I - FROM PIPING DESIGN TO INSTALLATION



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FIGURE 2 - (REFER TO SECTION 3)

SECTION 4. PHASE II - CONSTRUCTION QC INSPECTION

Phase II consists of a program of on-site QC construction inspection of sufficient scope to verify that all safety-related piping systems have been erected and installed in accordance with approved and current design drawings and specifications. These inspection activities include the following:

- 4.1 Preparation of construction inspection procedures indicating scope of inspection; characteristics to be examined; acceptance criteria and measurement tolerances.
- 4.2 QC inspection by personnel qualified and certified in accordance with ANSI N45.2.6.
- 4.3 Preparation, review and retention of QC inspection and "as-built" data.

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SECTION 5. PHASE III - NON-CONFORMANCE CONTROL

Phase III consists of an ongoing program, performed in conjunction with Phase II inspection, for identification and control of piping and pipe support non-conformances to approved design document requirements. Non-conformances which must either be reworked to comply with design requirements or which are to be replaced or rejected may be dispositioned by the site constructor(s) in accordance with site approved procedures. Non-conformances recommended for repair or use-as-is disposition by the constructor are processed to the designer for review and approval. Piping and pipe support non-conformances are examined by the Stress and/or Pipe Support disciplines for potential impact on previously completed seismic stress analyses. Where required, design analysis calculations are performed to support the approved disposition.

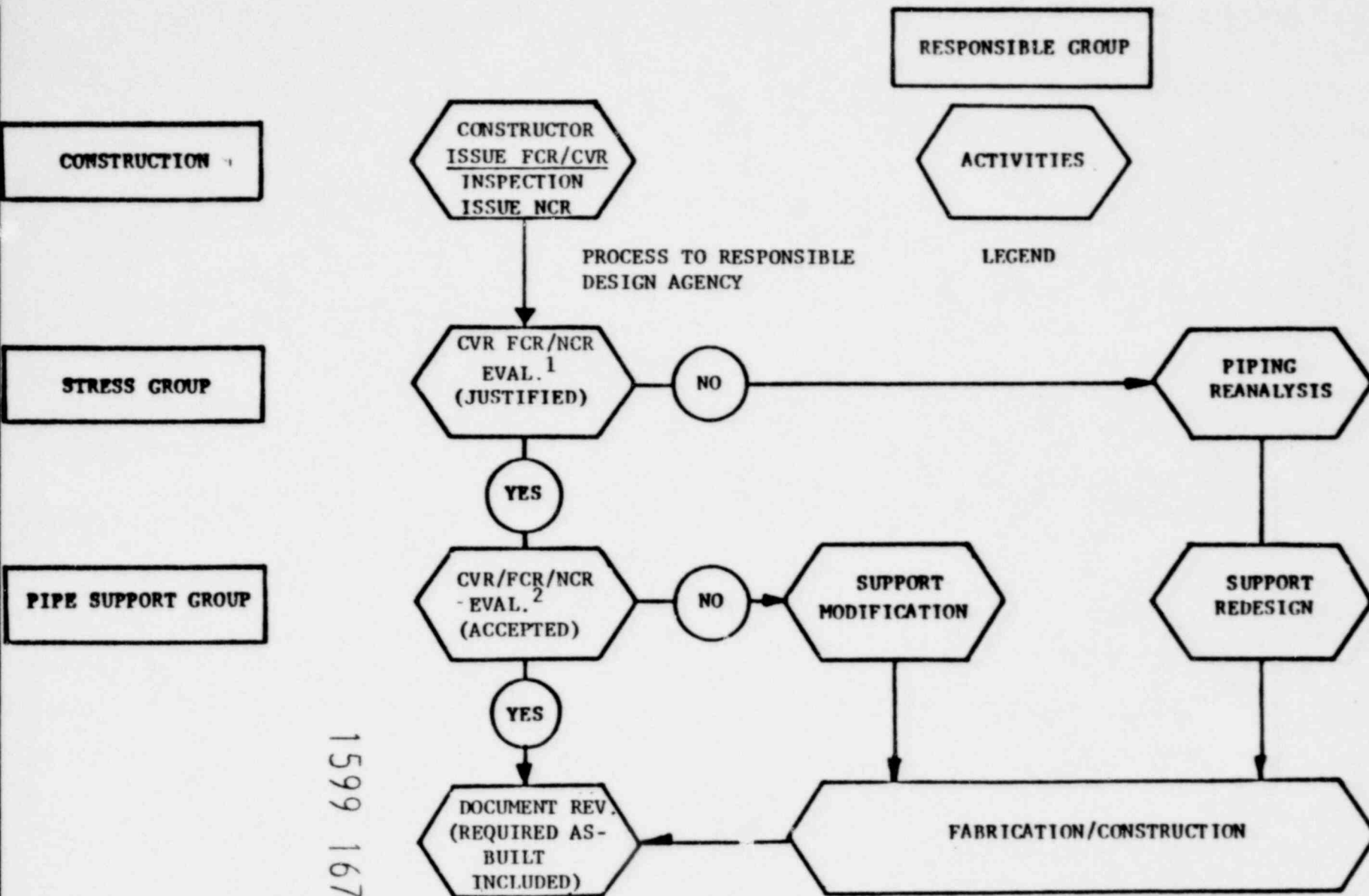
Before-the-fact design changes proposed by the constructor(s) either as Field Change Requests (FCRs) or Construction Variance Requests (CVRs) are processed and controlled per Phase I - Piping Design in accordance with design procedures.

At the end of the construction activity, piping and support non-conformances dispositioned on an "as-is" basis will be incorporated into "as-built" drawings. Approved FCRs and CVRs are also reflected in applicable design documents.

A flow chart depicting the processing of non-conforming piping and support systems is provided in Figure 3. The details of each step are described in standardized non-conformance control procedures governing constructor and designer processing of Non-Conformance Reports (NCRs).

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PHASE III - CVR/FCR/NCR RESOLUTION



CVR/FCR/NCR EVAL. ¹: CVR/FCR/NCR EVALUATION OF (1) PIPING GEOMETRY, (2) PIPE SUPPORT TYPE, LOCATION AND DIRECTION.

CVR/FCR/NCR EVAL. ²: CVR/FCR/NCR EVALUATION OF SUPPORT DETAILS.

FIGURE 3 - (REFER TO SECTION 5)

SECTION 6. PHASE IV - STRESS WALKDOWN

Phase IV is the final piping and support inspection review performed before the hot functional test and is intended to ensure that the piping systems will behave as designed. At the time of the inspection review, the piping systems are ready to be operated.

This inspection is commonly referred to as the "Stress Walkdown" or "Hanger Surveillance". The emphasis is that it is not a repeat of the QC function described in Phase II, but rather is intended to insure:

- A. Piping and its supports have not been effected by subsequent construction and testing activity.
- B. Piping is free of interferences during all anticipated modes of operation.
- C. All the pipe supports with working ranges have been properly adjusted.

Details concerning the stress walkdown inspection are currently being developed and will be implemented on a standardized basis at each of the SNUPPS jobsites. A procedure describing the SNUPPS stress walkdown will be prepared by the piping systems designer and will be available for review within the next 6-9 months.

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LIST OF SAFETY RELATED SYSTEMS

1. Reactor Coolant System
2. Chemical and Volume Control System
3. High Pressure Coolant Injection System
4. Residual Heat Removal System
5. Accumulator Safety Injection System
6. Containment Spray System
7. Component Cooling Water System
8. Essential Service Water System
9. Auxiliary Feedwater System
10. Main Feedwater System
11. Main Steam System
12. Standby Diesel Generator System
13. Emergency Fuel Oil System
14. Fuel Pool Cooling and Cleanup System
15. Borated Refueling Water Storage System
16. Containment Air cooling System
17. Containment Hydrogen Control System
18. Containment Leak Rate Test*
19. Aux. Turbine System
20. Steam Gen. Blowdown System
21. Reactor Make-up System*
22. Containment Purge System*
23. Floor & Equipment Drains System (Portions only)
24. Fire Protection System*

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- 25. Compressed Air System*
- 26. Liquid Radwaste System*
- 27. Nuclear Sampling System*

*Containment Penetration Areas Only.

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Enclosure 3

IE BULLETIN 79-14 - DESIGN DOCUMENT LISTRev. 1
FORM 2PROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03EJ01	Residual Heat Removal System	8	7-6-79
M-03EJ02	Residual Heat Removal System	10	8-15-79
M-03EJ03	Residual Heat Removal System	6	8-15-79
M-03EJ04	Residual Heat Removal System	5	3-26-79
M-03EJ05	Residual Heat Removal System	6	2-1-79
M-03EJ06	Residual Heat Removal System	3	7-11-79
M-03EJ07	Residual Heat Removal System	1	12-21-78
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IE BULLETIN 79-14 - DESIGN DOCUMENT LISTPROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03EN01	Containment Spray System	8	1-26-79
M-03EN02	Containment Spray System	9	7-9-79
M-03EN03	Containment Spray System	3	3-6-79
M-03EN05	Containment Spray System	3	8-3-79
M-03EN06	Containment Spray System	4	6-21-79
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IE BULLETIN 79-14 - DESIGN DOCUMENT LIST

FORM 2

PROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03EG01	Component Cooling Water System	9	9-6-79
M-03EG02	Component Cooling Water System	1	6-20-78
M-03EG03	Component Cooling Water System	7	9-6-79
M-03EG04	Component Cooling Water System	6	10-2-79
M-03EG05	Component Cooling Water System	5	11-20-78
M-03EG06	Component Cooling Water System	7	2-27-79
M-03EG07	Component Cooling Water System	6	8-1-79
M-03EG08	Component Cooling Water System	7	5-16-79
M-03EG09	Component Cooling Water System	3	9-28-78
M-03EG10	Component Cooling Water System	4	2-5-79
M-03EG11	Component Cooling Water System	5	2-5-79
M-03EG12	Component Cooling Water System	5	2-5-79
M-03EG13	Component Cooling Water System	6	2-5-79
M-03EG14	Component Cooling Water System	6	2-5-79
M-03EG15	Component Cooling Water System	7	6-4-79
M-03EG16	Component Cooling Water System	4	2-5-79
M-03EG17	Component Cooling Water System	4	2-5-79
M-03EG18	Component Cooling Water System	1	6-21-79
M-03EG21	Component Cooling Water System	3	12-15-78
M-03EG22	Component Cooling Water System	2	5-16-79
M-03EG23	Component Cooling Water System	3	12-28-78

PROJECT: SNUPPS

SYSTEM: _____

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03EG24	Component Cooling Water System	4	7-7-78
M-03EG25	Component Cooling Water System	3	1-26-79
M-03EG26	Component Cooling Water System	3	10-31-78

IE BULLETIN 79-14 - DESIGN DOCUMENT LIST

FORM 2

PROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03EF01	Essential Service Water	5	2-12-79
M-03EF02	Essential Service Water	8	7-11-79
M-03EF03	Essential Service Water	8	2-6-79
M-03EF04	Essential Service Water	6	2-6-79
M-03EF05	Essential Service Water	10	8-27-79
M-03EF06	Essential Service Water	7	2-6-79
M-03EF07	Essential Service Water	4	6-14-79
M-03EF08	Essential Service Water	1	4-3-79
M-03EF14	Essential Service Water	1	7-11-79
M-03EF15	Essential Service Water	1	7-11-79
M-03EF09	Essential Service Water	4	4-18-79
M-03EF10	Essential Service Water	4	8-14-79
M-03EF11	Essential Service Water	3	6-2-78
M-03EF13	Essential Service Water	5	9-6-79

PROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03AL01	Auxiliary Feedwater	6	4-11-79
M-03AL02	Auxiliary Feedwater	4	2-12-79
M-03AL03	Auxiliary Feedwater	3	6-27-78
M-03AL04	Auxiliary Feedwater	5	6-29-79
M-03AL05	Auxiliary Feedwater	5	2-16-79

PROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03AE04	Feedwater	6	7-9-79
M-03AE05	Feedwater	7	7-9-79

IE BULLETIN 79-14 - DESIGN DOCUMENT LISTPROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03AB01	Main Stream	9	8-27-79
M-03AB02	Main Stream	6	12-1-78
1599 178			

IE BULLETIN 79-14 - DESIGN DOCUMENT LIST

FORM 2

PROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03KJ01	Standby Diesel Engine	1	11-6-79
M-03KJ02	Standby Diesel Engine	1	10-2-79
1599 179			

IE BULLETIN 79-14 - DESIGN DOCUMENT LISTPROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03JE02	Emergency Fuel Oil	1	7-19-79
M-03JE03	Emergency Fuel Oil	1	7-19-79
1599 180			

PROJECT: SNUPPS

SYSTEM: _____

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03SJ01	Nuclear Sampling System	1	8-29-79

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FORM 2

PROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03EC02	Fuel Pool Cooling & Cleanup	4	8-9-79
M-03EC04	Fuel Pool Cooling & Cleanup	2	9-19-79
1599 182			

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FORM 2

PROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03BN01	Borated Refueling Water Storage	7	5-8-79
M-03BN02	Borated Refueling Water Storage	7	5-8-79
1599 183			

IE BULLETIN 79-14 - DESIGN DOCUMENT LISTPROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03GN01	Containment Cooling	5	8-23-79
M-03GN02	Containment Cooling	5	9-7-79
1599 184			

IE BULLETIN 79-14 - DESIGN DOCUMENT LISTPROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03GS01	Containment Hydrogen Control	4	9-6-79
	1599 185		

IE BULLETIN 79-14 - DESIGN DOCUMENT LIST

FORM 2

PROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03FC01	Auxiliary Turbines	6	11-6-78
M-03FC02	Auxiliary Turbines	2	9-12-78
1599 186			

IE BULLETIN 79-14 - DESIGN DOCUMENT LISTPROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03BM01	Steam Generator Blowdown	5	7-19-79
M-03BM02	Steam Generator Blowdown	4	11-22-78
M-03BM03	Steam Generator Blowdown	3	3-5-79
M-03BM17	Steam Generator Blowdown	2	7-30-79
M-03BM18	Steam Generator Blowdown	1	4-18-79
M-03BM19	Steam Generator Blowdown	1	4-18-79
M-03BM20	Steam Generator Blowdown	1	4-18-79
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FORM 2

PROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03BL03	Reactor Make-up Water	4	10-4-78
	1599 188		

IE BULLETIN 79-14 - DESIGN DOCUMENT LIST

FORM 2

PROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03LF02	Floor & Equipment Drains	6	9-13-79
M-03LF10	Floor & Equipment Drains	8	7-11-79
1599 189			

IE BULLETIN 79-14 - DESIGN DOCUMENT LIST

FORM 2

PROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03KC21	Fire Protection	4	9-24-79
	1599 190		

IE BULLETIN 79-14 - DESIGN DOCUMENT LIST

FORM 2

PROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03GP01	Containment Leak Rate Test	1	5-29-79
	1599 191		

IE BULLETIN 79-14 - DESIGN DOCUMENT LIST

FORM 2

PROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03KA01	Compressed Air	6	6-14-79
M-03KA43	Compressed Air	2	8-1-79
1599 192			

IE BULLETIN 79-14 - DESIGN DOCUMENT LIST

FORM 2

PROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03HB01	Liquid Radwaste	6	1-19-79
M-03HB24	Liquid Radwaste	5	3-19-79
M-03HB28	Liquid Radwaste	2	7-30-79
M-03HB27	Liquid Radwaste	1	6-6-79
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IE BULLETIN 79-14 - DESIGN DOCUMENT LISTPROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03BB08	Reactor Coolant	2	3-26-79
M-03BB09	Reactor Coolant	2	3-26-79
M-03BB11	Reactor Coolant	3	3-26-79
M-03BB12	Reactor Coolant	1	6-18-79
M-03BB13	Reactor Coolant	0	12-5-78
M-03BB01	Reactor Coolant	4	1-22-78
M-03BB02	Reactor Coolant	2	7-23-79
M-03BB04	Reactor Coolant	2	3-19-79
M-03BB05	Reactor Coolant	0	12-13-78
M-03BB06	Reactor Coolant	0	12-13-78
M-03BB07	Reactor Coolant	4	6-18-79
M-03BB14	Reactor Coolant	1	9-26-79
M-03BB15	Reactor Coolant	0	12-13-78

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IE BULLETIN 79-14 - DESIGN DOCUMENT LISTPROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03BG01	Chemical & Volume Control	8	6-25-79
M-03BG02	Chemical & Volume Control	9	5-15-79
M-03BG03	Chemical & Volume Control	8	7-3-79
M-03BG04	Chemical & Volume Control	5	6-25-79
M-03BG05	Chemical & Volume Control	9	7-18-79
M-03BG09	Chemical & Volume Control	4	3-14-79
M-03BG11	Chemical & Volume Control	6	6-25-79
M-03BG15	Chemical & Volume Control	4	10-11-78
M-03BG16	Chemical & Volume Control	6	9-19-79
M-03BG17	Chemical & Volume Control	6	8-21-79
M-03BG18	Chemical & Volume Control	4	7-11-79
M-03BG21	Chemical & Volume Control	4	10-4-78
M-03BG22	Chemical & Volume Control	4	3-19-79
M-03BG23	Chemical & Volume Control	5	6-29-79
M-03BG24	Chemical & Volume Control	5	7-3-79
M-03BG33	Chemical & Volume Control	4	8-15-79
M-03BG10	Chemical & Volume Control	3	6-24-79
M-03BG34	Chemical & Volume Control	2	7-11-78
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IE BULLETIN 79-14 - DESIGN DOCUMENT LIST

FORM 2

PROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-03EM01	High Pressure Coolant Injection	6	10-19-78
M-03EM02	High Pressure Coolant Injection	4	12-28-78
M-03EM03	High Pressure Coolant Injection.	4	3-5-79
M-03EM04	High Pressure Coolant Injection	3	6-21-79
M-03EM05	High Pressure Coolant Injection	3	3-19-79
M-03EM08	High Pressure Coolant Injection	4	3-29-79
M-03EM10	High Pressure Coolant Injection	2	3-5-79
M-03EM06	High Pressure Coolant Injection	2	7-12-79
M-03EM11	High Pressure Coolant Injection	2	8-7-79
M-03EM12	High Pressure Coolant Injection	2	7-9-79
M-03EM13	High Pressure Coolant Injection	1	6-21-79
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IE BULLETIN 79-14 - DESIGN DOCUMENT LIST

Rev. 1

FORM 2

PROJECT: SNUPPS

SYSTEM: _____

PIPING ISOMETRICS AND/OR DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
Wolf Creek			
M-KC0111(Q)	ESWS Pumphouse Piping Plan	4	6-8-79
M-KC0911(Q)	ESWS Pumphouse Piping Sections	4	6-8-79
Callaway Unit 1			
M-UC0111(Q)	ESWS Pumphouse Piping Plan	4	9-27-79
M-UC0211(Q)	UHS Cooling Tower Piping Plan & Section	3	8-30-78
M-UC0911(Q)	ESWS Pumphouse Piping Section & Details	3	6-21-79
Callaway Unit 2			
M-WC0211(Q)	UHS Cooling Tower Piping Plan & Section	2	11-17-78
Rochester			
M-RC0111(Q)	ESWS Pumphouse Piping Plan	0	9-30-77
M-RC0911(Q)	ESWS Pumphouse Piping Plan & Sect.	0	9-30-77
M-RC0912(Q)	ESWS Pumphouse Piping Section	0	9-30-77

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Enclosure 4

IE BULLETIN 79-14 - DESIGN DOCUMENT LISTRev. 1
FORM 5PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06EJ01	Residual Heat Removal System	11	5-1-79
M-06EJ02	Residual Heat Removal System	10	6-20-79
M-06EJ03	Residual Heat Removal System	15	9-19-79
M-06EJ04	Residual Heat Removal System	3	5-16-79
M-06EJ06	Residual Heat Removal System	1	9-18-79
M-06EJ05	Residual Heat Removal System	*	
M-06EJ07	Residual Heat Removal System	*	
NOTE: * Drawings will be issued at a later date.			
1599 198			

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PROJECT: SNUPPSSYSTEM: PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06EP01	Accumulator Safety Injection System	-	-
M-06EP02	Accumulator Safety Injection System	-	-
NOTE: Drawings will be issued at a later date.			
1599 199			

PROJECT: SNUPPS

SYSTEM: _____

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06EN01	Containment Spray System	11	7-24-79
M-06EN02	Containment Spray System	15	6-20-79
M-06EN03	Containment Spray System	5	7-12-79
M-06EN05	Containment Spray System	5	8-15-79
M-06EN06	Containment Spray System	*	

NOTE: * Drawing will be issued at a later date.

1599 200

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SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06EG01	Component Cooling Water System	12	7-16-79
M-06EG02	Component Cooling Water System	9	7-25-79
M-06EG03	Component Cooling Water System	13	7-26-79
M-06EG04	Component Cooling Water System	8	5-9-79
M-06EG05	Component Cooling Water System	5	7-11-79
M-06EG06	Component Cooling Water System	13	8-27-79
M-06EG07	Component Cooling Water System	12	8-20-79
M-06EG08	Component Cooling Water System	1	5-7-79
M-06EG09	Component Cooling Water System	2	5-1-79
M-06EG10	Component Cooling Water System	1	4-18-79
M-06EG11	Component Cooling Water System	2	5-23-79
M-06EG12	Component Cooling Water System	4	8-9-79
M-06EG13	Component Cooling Water System	4	8-7-79
M-06EG14	Component Cooling Water System	1	4-23-79
M-06EG15	Component Cooling Water System	3	8-13-79
M-06EG16	Component Cooling Water System	1	4-24-79
M-06EG17	Component Cooling Water System	6	6-28-79
M-06EG18	Component Cooling Water System	0	5-25-79
M-06EG23	Component Cooling Water System	1	5-24-79
M-06EG24	Component Cooling Water System	1	12-7-78

1599 201

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FORM 5

PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06EG25	Component Cooling Water System	1	12-19-78
M-06EG26	Component Cooling Water System	4	4-20-79
M-06EG21	Component Cooling Water System	*	
M-06EG22	Component Cooling Water System	*	
NOTE: * Drawings will be issued at a later date.			
1599 202			

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SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06EF01	Essential Service Water	14	6-9-78
M-06EF02	Essential Service Water	26	8-17-79
M-06EF03	Essential Service Water	13	8-15-79
M-06EF04	Essential Service Water	12	3-23-79
M-06EF05	Essential Service Water	17	4-23-79
M-06EF06	Essential Service Water	22	8-15-79
M-06EF07	Essential Service Water	2	6-20-79
M-06EF08	Essential Service Water	2	8-13-79
M-06EF14	Essential Service Water	2	8-27-79
M-06EF15	Essential Service Water	0	12-28-78
M-06EF09	Essential Service Water	*	
M-06EF10	Essential Service Water	*	
M-06EF11	Essential Service Water	*	
M-06EF13	Essential Service Water	*	
NOTE: * Drawings will be issued at a later date.			
1599 203			

PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06AL01	Auxiliary Feed Water	12	8-8-79
M-06AL02	Auxiliary Feed Water	4	1-17-79
M-06AL03	Auxiliary Feed Water	7	3-2-79
M-06AL04	Auxiliary Feed Water	4	3-12-79
M-06AL05	Auxiliary Feed Water	5	8-13-79

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FORM 5

PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06AE04	Feedwater	5	4-6-79
M-06AE05	Feedwater	2	5-25-79
1599 205			

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PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06AB01	Main Stream	5	8-21-79
M-06AB02	Main Stream	3	4-24-79
1599 206			

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SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06KJ01	Standby Diesel Engine	2	8-13-79
M-06KJ02	Standby Diesel Engine	*	
NOTE: * Drawing will be issued at a later date.			
1599 207			

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PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06JE02	Emergency Fuel Oil	0	6-4-79
M-06JE03	Emergency Fuel Oil	2	8-9-79
1599 208			

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FORM 5

PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06SJ01	Nuclear Sampling System	0	8-27-79
	1599 209		

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FORM 5

PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06EC02	Fuel Pool Cooling & Cleanup	0	8-17-78
M-06EC04	Fuel Pool Cooling & Cleanup	3	9-5-79
1599 210			

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FORM 5

PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06BN01	Borated Refueling Water Storage	12	5-23-79
M-06BN02	Borated Refueling Water Storage	11	7-30-79
1599 211			

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FORM 5

PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06GN01	Containment Cooling	8	8-27-79
M-06GN02	Containment Cooling	10	9-18-79
1599 212			

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FORM 5

PROJECT: SNUPPSSYSTEM: PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06GS01	Containment Hydrogen Control	0	5-24-79
1599 213			

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FORM 5

PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06FC01	Auxiliary Turbines	6	1-8-79
M-06FC02	Auxiliary Turbines	0	6-7-79
1599 214			

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FORM 5

PROJECT: SNUPPSSYSTEM: PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06BM01	Steam Generator Blowdown	5	7-24-79
M-06BM02	Steam Generator Blowdown	4	11-14-78
M-06BM03	Steam Generator Blowdown	1	3-12-79
M-06BM17	Steam Generator Blowdown	*	
M-06BM18	Steam Generator Blowdown	*	
M-06BM19	Steam Generator Blowdown	*	
M-06BM20	Steam Generator Blowdown	*	
NOTE: * Drawings will be issued at a later date.			
1599 215			

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FORM 5

PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06BL03	Reactor Make-up Water	2	4-27-79
	1599 216		

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FORM 5

PROJECT: _____ SNUPPS _____

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
	Containment Purge System	-	-
	NOTE: Drawings will be issued at a later date. Drawing number presently not assigned		
	1599 217		

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FORM 5

PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06LF02	Floor & Equipment Drains	14	8-17-79
M-06LF10	Floor & Equipment Drains	5	8-27-79
1599 218			

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FORM 5

PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06KC21	Fire Protection	6	9-18-79
	1599 219		

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FORM 5

PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-05GP01	Containment Leak Rate Test	0	3-27-79
	1599 220		

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FORM 5

PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06KA01	Compressed Air	7	12-28-78
M-06KA43	Compressed Air	0	8-14-79
1599 221			

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FORM 5

PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06HB01	Liquid Radwaste	6	8-27-79
M-06HB24	Liquid Radwaste	1	1-30-79
M-06HB28	Liquid Radwaste	1	9-18-79
M-06HB27	Liquid Radwaste	*	
NOTE: * Drawing will be issued at a later date.			
1599 222			

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FORM 5

PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06BB08	Reactor Coolant	1	8-13-79
M-06BB09	Reactor Coolant	0	9-5-79
M-06BB11	Reactor Coolant	3	8-14-79
M-06BB12	Reactor Coolant	0	8-27-79
M-06BB13	Reactor Coolant	*	
M-06BB14	Reactor Coolant	*	
M-06BB15	Reactor Coolant	*	
M-06EB01	Reactor Coolant	0	10-12-79
M-06BB02	Reactor Coolant	0	9-20-79
M-06BB04	Reactor Coolant	0	9-26-79
M-06BB05	Reactor Coolant	*	
M-06BB06	Reactor Coolant	*	
M-06BB07	Reactor Coolant	0	10-4-79
NOTE: * Drawings will issued at a later date.			
1599 223			

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FORM 5

PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06BG01	Chemical & Volume Control	16	8-27-79
M-06BG02	Chemical & Volume Control	17	9-5-79
M-06BG03	Chemical & Volume Control	16	7-13-79
M-06BG04	Chemical & Volume Control	20	8-14-79
M-06BG05	Chemical & Volume Control	18	6-14-79
M-06BG09	Chemical & Volume Control	0	7-24-79
M-06BG11	Chemical & Volume Control	12	5-31-79
M-06BG15	Chemical & Volume Control	12	5-25-79
M-06GB16	Chemical & Volume Control	10	3-13-79
M-06BG17	Chemical & Volume Control	2	7-23-79
M-06BG18	Chemical & Volume Control	0	5-30-78
M-06BG21	Chemical & Volume Control	5	8-17-79
M-06BG22	Chemical & Volume Control	15	8-15-79
M-06BG23	Chemical & Volume Control	8	9-18-79
M-06BG24	Chemical & Volume Control	0	5-16-79
M-06BG33	Chemical & Volume Control	0	5-23-79
M-06BG34	Chemical & Volume Control	*	
NOTE: * Drawing will issued at a later date 1599 224			

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PROJECT: SNUPPS

SYSTEM: _____

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
M-06EM01	High Pressure Coolant Injection	15	7-24-79
M-06EM02	High Pressure Coolant Injection	13	9-13-79
M-06EM03	High Pressure Coolant Injection	2	8-23-79
M-06EM04	High Pressure Coolant Injection	4	7-23-79
M-06EM05	High Pressure Coolant Injection	1	7-23-79
M-06EM08	High Pressure Coolant Injection	1	3-9-78
M-06EM10	High Pressure Coolant Injection	0	5-2-79
M-06EM06	High Pressure Coolant Injection	*	
M-06EM11	High Pressure Coolant Injection	*	
M-06EM12	High Pressure Coolant Injection	*	
M-06EM13	High Pressure Coolant Injection	*	
NOTE: * Drawings will be issued at a later date.			
1599 225			

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FORM 5

PROJECT: SNUPPS

SYSTEM:

PIPE SUPPORT DRAWINGS

IDENTIFICATION NO.	TITLE	REVISION	DATE
Wolf Creek M-K60111	ESWS Pumphouse	*	
Callaway Unit 1 M-U60111	ESWS Pumphouse	1	5-9-79
M-U60211	UHS Cooling Tower	4	5-16-79
Callaway Unit 2 M-W60211	UHS Cooling Tower	*	
Rochester M-R60111	ESWS Pumphouse	*	
NOTE: * Drawings will be issued at a later date.			
1599 226			