

THE BABCOCK & WILCOX COMPANY
POWER GENERATION GROUP

To

D.H. ROY, MANAGER, PLANT DESIGN

From

F.W. SULLIVAN, PS&P (2614)

Cust.

Subj.

DRAFT NPG-0151-81G

File No.
or Ref.

Date
July 22, 1977

This letter is cover and customer use and should only.

Attached is a draft copy of NPG-0151-81G, "Objectives and Responsibilities - Plant Design Section" for your review and concurrence prior to submittal to J.C. Deddens for approval.

Please note that there is no statement under Section I - Objective or under the General section of Appendix E. I am requesting you enter a statement for each.

I would appreciate it if you could return your comments to me by Wednesday, August 10, 1977.

FWS:cas

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Def. Exh. For ID 466

Pl. Exh. in Ev

Charles Shapiro CSR

Doyle Reporting Inc. 2/3/82

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THE BABCOCK & WILCOX COMPANY
ADMINISTRATIVE MANUAL
POLICIES AND PROCEDURES

FWS:7-14-77

NUMBER
NPG-0151-81G (Rev 0)

SECTION
ORGANIZATION, RESPONSIBILITIES
AND RELATIONSHIPS

SUBJECT
OBJECTIVES AND RESPONSIBILITIES-
PLANT DESIGN SECTION

I. OBJECTIVES

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II. RESPONSIBILITIES

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Perform the functional design and associated systems analysis of the reactor coolant and secondary systems; the preparation of specifications of B & W-supplied systems and component requirements and interfaces, of balance-of-plant criteria, and of proposal information; the review of bid specifications; the integration of mechanical, system, plant and NPGD engineering activities supporting Babcock-Brown-Boveri GmbH (BBR) contracts.

A. STANDARDS

1. Perform analyses required to determine reactor coolant system flow distribution. Plan and implement related vessel model flow tests.
2. Prepare and maintain standard system and component requirement specifications for the scope of supply defined in the Work Breakdown Structure (WBS).
3. Prepare and maintain standard system descriptions of the reactor coolant and secondary systems, and the balance-of-plant criteria documents.
4. Review and approve standard system design descriptions and component design reports to assure compliance with requirement specifications and applicable state and federal regulations and guides.
5. Review and approve plant design changes affecting the Plant Parameter List, system and component requirement specifications, and the RCS/Standard System design descriptions.
6. Establish and implement approved results engineering programs utilizing data from operating plants.
7. Prepare engineering standards and procedures.
8. Participate with Product Development in establishing future product trends and market requirements.
9. Recommend R&D programs leading to changes in the standard product. Administer approved and funded programs.

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II. RESPONSIBILITIES (Cont'd)

A. STANDARDS (cont'd)

10. Prepare standard Safety Analysis Report (SAR) material and support standard licensing effort.

B. DOMESTIC CONTRACTS

1. Provide analyses required to establish performance and functional design criteria for reactor control pressurizer and pressurizer control, steam generator control, customer feedwater and steam systems and Integrated Control System.
2. Establish heatup, cooldown, and operational characteristics of the NSS. Provide input for related auxiliary system design.
3. Provide analyses required to establish performance criteria and functional requirements for the reactor coolant system and steam plant system.
4. Prepare and maintain contract system and component requirement specifications for the scope-of-supply defined in the WBS.
5. Prepare and maintain contract system descriptions of the reactor coolant and secondary systems and the balance-of-plant criteria document.
6. Review and approve contract system design descriptions and component design reports to assure compliance with requirement specifications and applicable state and federal regulations and guides.
7. Determine the dynamic and static loadings imposed on components and supports of the reactor coolant system.
8. Prepare engineering manhour and computer hour estimates in support of proposal and contract engineering work.
9. Provide engineering support of marketing and sales efforts as required by Marketing Department and Product Development Section.
10. Evaluate potential or postulated transient and accident conditions to determine that system response and consequences are within acceptable limits.
11. Prepare SAR material. Assist in presentation and defense of applicable SAR material as required by Licensing Section.
12. Perform analyses required to establish performance and functional criteria for all systems or equipment intended to prevent, mitigate, and/or terminate postulated accident conditions.
13. Perform analyses required to establish performance and functional criteria for radioactive waste handling systems.

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II. RESPONSIBILITIES (cont'd)B. DOMESTIC CONTRACTS (cont'd)

14. Establish reactor building and sub-compartment design criteria.
15. Manage the applicable WBS tasks to perform in accordance with NSS Contract requirements.
16. Develop and maintain WPD/WA's and TCN's for tasks assigned.
17. Support other WBS tasks as defined in the Work Package Descriptions.

C. BBR CONTRACTS

1. Coordinate, schedule, integrate, expedite, and approve Engineering Department activities and information flow between B&W and BBR, and between internal B&W engineering units for BBR related activities. This function applies to Design Overview Program (DOP), Master Service, Licensing Agreement, Consulting Activities, and other Engineering activities as directed or negotiated with International Program Management (IPM).
2. Review, generate, or cause to be generated, DOP comments on BBR systems, components, or procedures as described in BBR documentation.
3. Initiate, formulate, and recommend team members for Special Purpose Reviews (SPR's) for systems, components, and problem areas.
4. Perform integration and review activities to assure technical adequacy, accuracy and completeness of Engineering Department technical information submitted to BBR.
5. Provide task descriptions to IPM with resource estimates and schedules to define DOP, Master Service, License Agreement, or Consulting Work.
6. Prepare and maintain core analytical input requirements documentation.
7. Prepare or cause to be prepared contract documentation in accord with Engineering Department procedures to provide BBR with timely, documented, B&W initiated designs or design changes that directly affect the BBR design.

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II. RESPONSIBILITIES (cont'd)B. DOMESTIC CONTRACTS (cont'd)

14. Establish reactor building and sub-compartment design criteria.
15. Manage the applicable WBS tasks to perform in accordance with NSS Contract requirements.
16. Develop and maintain WPD/WA's and TCN's for tasks assigned.
17. Support other WBS tasks as defined in the Work Package Descriptions.

C. BBR CONTRACTS

1. Coordinate, schedule, integrate, expedite, and approve Engineering Department activities and information flow between B&W and BBR, and between internal B&W engineering units for BBR related activities. This function applies to Design Overview Program (DOP), Master Service, Licensing Agreement, Consulting Activities, and other Engineering activities as directed or negotiated with International Program Management (IPM).
2. Review, generate, or cause to be generated, DOP comments on BBR systems, components, or procedures as described in BBR documentation.
3. Initiate, formulate, and recommend team members for Special Purpose Reviews (SPR's) for systems, components, and problem areas.
4. Perform integration and review activities to assure technical adequacy, accuracy and completeness of Engineering Department technical information submitted to BBR.
5. Provide task descriptions to IPM with resource estimates and schedules to define DOP, Master Service, License Agreement, or Consulting Work.
6. Prepare and maintain core analytical input requirements documentation.
7. Prepare or cause to be prepared contract documentation in accord with Engineering Department procedures to provide BBR with timely, documented, B&W initiated designs or design changes that directly affect the BBR design.

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II. RESPONSIBILITIES (cont'd)B. DOMESTIC CONTRACTS (cont'd)

14. Establish reactor building and sub-compartment design criteria.
15. Manage the applicable WBS tasks to perform in accordance with NSS Contract requirements.
16. Develop and maintain WPD/WA's and TCN's for tasks assigned.
17. Support other WBS tasks as defined in the Work Package Descriptions.

C. BER CONTRACTS

1. Coordinate, schedule, integrate, expedite, and approve Engineering Department activities and information flow between BSW and BBR, and between internal B&W engineering units for BBR related activities. This function applies to Design Overview Program (DOP), Master Service, Licensing Agreement, Consulting Activities, and other Engineering activities as directed or negotiated with International Program Management (IPM).
2. Review, generate, or cause to be generated, DOP comments on BBR systems, components, or procedures as described in BBR documentation.
3. Initiate, formulate, and recommend team members for Special Purpose Reviews (SPR's) for systems, components, and problem areas.
4. Perform integration and review activities to assure technical adequacy, accuracy and completeness of Engineering Department technical information submitted to BBR.
5. Provide task descriptions to IPM with resource estimates and schedules to define DOP, Master Service, License Agreement, or Consulting Work.
6. Prepare and maintain core analytical input requirements documentation.
7. Prepare or cause to be prepared contract documentation in accord with Engineering Department procedures to provide BBR with timely, documented, B&W initiated designs or design changes that directly affect the BBR design.

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PLANT INTEGRATION UNIT

DRAFT

I. GENERAL

Plant Integration Unit is responsible for achieving a unity of effort among the major functional specialists in the NPGD Engineering Department. This is accomplished by assuring an accurate, consistent and timely flow of information from the basic requirements and analytical inputs to the delivery of high quality equipment. This duty is carried out through the definition of technical system requirements for the Nuclear Steam System and the assurance that the design and equipment which constitute the product are in conformance with established codes, regulations and requirements. This overall responsibility of Integration leads to a primary role in the solution of critical product problems and in the assessment of the need for product change.

A. STANDARDS AND CONTRACTS

1. Design lead for the Nuclear Steam Supply and Secondary Systems and specification of functional requirements and interfaces for related subsystems and components. This includes definition of requirements and issuance and maintenance of corresponding standard and contract documents.
2. Identify and coordinate the analysis work required to define both Plant Level and System/Component Requirements.
3. Review and approve system design descriptions and component drawings and specifications for compliance with functional requirements.
4. Coordinate the overall resolution of critical product problems.
5. Approve design changes involving the NSS/NSC components or systems.
6. Review, approve and prepare selected portions of the SAR.
7. Chair and participate in formal design reviews of new designs or major redesigns of NSS/NSC components and systems.
8. Maintain the WBS.
9. Participate in committee and task force work for Nuclear Industrial Codes and Standards.
10. Participate in the development of QA and operating procedures.

B. PROPOSALS

1. Review customer bid specification and identify deviations from the Standard.
2. Review and approve proposal write-ups.

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SAFETY ANALYSIS UNIT

DRAFT

I. GENERAL

The Safety Analysis Unit is responsible for the comprehensive evaluation of reactor safety factors related to the design and operation of systems and equipment within the nuclear steam system. Responsibility includes proving that the reactor plant is an acceptable risk to the public by showing that potential or postulated reactor accident or radioactive material releases do not exceed acceptable limits.

II. ACCIDENT ANALYSISA. STANDARDS

1. Prepare standards, guide specifications and backup information.
2. Prepare calculational standards for all routine calculations.
3. Establish and maintain files of ANS, NRC and other standard design criteria that apply to reactor safety and environment.
4. Maintain cognizance of US NRC - sponsored R&D programs in accident analysis areas.
5. Develop new methods of calculation and improvements to existing methods in the area of safety analysis.

B. CONTRACTS

1. Specify functional safety criteria for Reactor Protection System.
2. Specify functional safety criteria for Control Rod Drive System.
3. Specify functional safety criteria for feedwater system.
4. Specify functional safety criteria for steam system.
5. Specify functional safety criteria for primary system (relief capacity requirements for accidents).
6. Specify functional safety criteria for RC pump inertia.
7. Establish and specify functional safety criteria for ESAS and reactor building isolation system related to electrical circuit redundancy, etc.
8. Prepare writeups and supporting analysis for accident analysis section of SAR and environmental reports.
9. Determine magnitude of steam releases and fuel failures for environmental consequences evaluation.

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APPENDIX B (cont'd)

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II. ACCIDENT ANALYSIS (cont'd)

B. CONTRACTS (cont'd)

10. Establish maximum limits of operation and acceptable damage criteria to form basis of reactor protection system.
11. Specify set points and limits for reactor protection system.
12. Prepare and present safety analysis section of customer training programs.
13. Review and evaluate test specifications and operating procedures related to accident analysis.
14. Review SAR Sections related to accident analysis.
15. Review customer prepared material related to accident analysis.
16. Review plant component specifications and equipment engineering changes that relate to accident analysis.

C. PROPOSALS

1. Provide design support to Proposal Unit on Safety Analysis and Reactor Protection System Functional Requirements.
2. Prepare technical reports and presentations which answer customer or NRC questions.

III. RADIATION ANALYSIS

A. STANDARDS

1. Prepare calculational standards for all routine calculations.
2. Establish and maintain files of ANS, NRC and other standard design criteria that apply to reactor safety and environment.
3. Maintain cognizance of USNRC-sponsored R&D programs in radiation protection areas.
4. Develop new methods of calculation and improvements to existing methods in the area of safety analysis.

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III. RADIATION ANALYSIS (cont'd)

B. CONTRACTS

1. Specify functional safety criteria for Waste Disposal System.
2. Specify functional safety criteria for fission product cleanup systems, including spray rate and spray system functional requirements if chemical iodine removal is used.
3. Specify safety criteria for permissible materials and protective coatings in reactor building following LOCA.
4. Evaluate post-accident chemical phenomena and specify related limitations or criteria for other plant systems.
5. Evaluate post-LOCA hydrogen generation and control in reactor building and specify functional requirements for post-accident reactor building hydrogen removal equipment or methods.
6. Establish activity levels for:
 - A. Reactor Coolant System
 - B. Secondary Steam System
 - C. Makeup & Purification System
 - D. Radioactive Waste System
7. Determine source activities for operation and shutdown to be used in shielding analysis for:
 - A. Reactor Coolant System
 - B. Secondary Steam System
 - C. Makeup & Purification System
 - D. Radioactive Waste System
8. Prepare writeups and supporting analysis for:
 - A. Radioactive Waste Management Section of SAR
 - B. Evaluation of Spray System Effectiveness part of SAR
 - C. Evaluation of post-accident chemical phenomena (H generation and control) part of SAR
 - D. Environmental consequences of reactor accidents section of SAR
 - E. Activity levels for accident radioactive release section of environmental reports
9. Determine fission product activities and radiation levels in reactor building, emergency core cooling system solution, and reactor core under accident conditions as required by shielding analysis.
10. Evaluate environmental consequences of normal operation of reactor plant.

APPENDIX B (cont'd)

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B. CONTRACTS (cont'd)

11. Establish environmental consequence of anticipated reactor transients and identify operations procedure or equipment to mitigate environmental consequences.
12. Specify technical specification limits for primary and secondary system activity levels.
13. Review and evaluate test specifications and operating procedures related to radiation protection.
14. Review SAR Sections related to radiation protection.
15. Review customer prepared material related to radiation protection.
16. Review plant component specifications and equipment engineering changes that relate to radiation protection.

C. PROPOSALS

1. Provide design support to Proposal Unit and radiation requirements.
2. Prepare technical reports and presentations which answer customer or NRC questions.

IV. RADIATION ANALYSIS

A. STANDARDS

1. Prepare calculational standards for all routine calculations.
2. Preparation of standards, guide specifications and backup information.
3. Establish and maintain files of ANS, NRC and other standard design criteria that apply to reactor safety and environment.
4. Maintain cognizance of US NRC-sponsored R&D programs in shielding.
5. Develop new methods of calculations and improvements to existing methods in the area of safety analysis.

B. CONTRACTS

1. Specify Shielding Design Criteria for protection of operating personnel, the public, and equipment from radiation exposure.
2. Establish neutron fluxes and shielding requirement for the out-of-core detectors during normal operation.
3. Determine NVT in reactor internals and reactor vessel.

APPENDIX B (cont'd)

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IV. RADIATION ANALYSIS (cont'd)B. CONTRACTS (cont'd)

4. Determine heat generation rates in reactor vessel, its internals, and support structure, and in the primary shield and supply to thermal analysis group.
5. Prepare writeups and supporting analysis for radiation protection section of SAR.
6. Review customer prepared material related to shielding.
7. Review plant component specifications and equipment engineering changes that relate to shielding.

C. PROPOSALS

1. Provide design support to Proposal Unit Shielding Requirements.
2. Prepare technical reports and presentations which answer customer or ERC questions.

APPENDIX C

DRAFT

CONTROL ANALYSIS UNIT

I. GENERAL

The Control Analysis Unit is responsible for providing the analysis required to define functional design criteria for the Reactor Coolant System and Secondary System components and equipment.

A. STANDARDS AND CONTRACTS

1. Provide the analysis required per the applicable WBS for defining functional design criteria for the RCS/SS components and equipment.
2. Recommend R&D programs for standard product improvement or cost reduction and administer approved, funded programs.
3. Prepare standard SAR material and support licensing effort.
4. Develop and maintain WPD/WA's and TCN's for Control/Performance Analysis task.
5. Support other WBS tasks as defined in the Work Package Descriptions.
6. Support the resolution of site problems and review test results for acceptability.
7. Support International projects as required.
8. Identify, and participate in the resolution of risk items.
9. Review RCS and SS Descriptions prior to their release.
10. Provide input to the Plant Parameter list describing plant operating conditions and setpoints.
11. Keep Engineering and Project Management advised of work status and critical problem areas.
12. Provide a service to other NPCD organizations requiring the unique expertise found within the Unit.

B. PROPOSALS

1. Provide analysis necessary to support customer bid specifications which require deviations from Standard Plant.
2. Provide technical expertise to Marketing when required for answering customer inquiries.

APPENDIX D
EMERGENCY CORE COOLANT SYSTEM UNIT (ECCS)

DRAFT

I. GENERAL

The ECCS Analysis Unit is responsible for the analysis of the Loss of Coolant Accident leading to development of functional requirements for NSS equipment, reactor building design and development of LOCA related operational limits.

A. STANDARDS AND DEVELOPMENT

1. Prepare and maintain standard analysis programs, functional criteria, analysis procedures, and standard input data.
2. Recommend R&D programs for Tests and Developmental programs leading to more reasonable analysis results and improved design at lower cost. Administer approved and funded programs.
3. Maintain cognizance of Industry/NRC developments leading to improved response to Customer/NRC requirements.
4. Prepare and maintain standard design and SAR material and support standard Licensing efforts.

B. CONTRACTS AND GENERIC

1. Manage the WBS tasks to perform in accordance with NSS contract requirements — including manpower, computer costs and schedule.
2. Develop and maintain WPD/WA's and TCN for the tasks assigned.
3. Support interface tasks as described in Work Package Descriptions and OI's.
4. Provide Contract/Generic analyses to:
 - 4.1. Establish core cooling during LOCA.
 - 4.2. Specify Auxiliary System post-accident performance requirements including actuating signal and set points. The Auxiliary Systems include:
 - Core flooding system
 - HPI system
 - LPI system
 - Building spray and cooling heat removal requirements
 - 4.3. Evaluate effects of fuel failure during LOCA.
 - 4.4. Evaluate solids concentration in reactor vessel after LOCA.
 - 4.5. Establish technical specifications for ECCS equipment.

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APPENDIX D (cont'd)

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I. GENERAL (cont'd)

B. CONTRACTS AND GENERIC (cont'd)

4. (cont'd)

- 4.6. Review test and operating procedures for ECCS systems and equipment.
 - 4.7. Evaluate ECCS system and equipment field performance data.
 - 4.8. Establish LOCA ΔP loading for reactor internals.
 - 4.9. Establish LOCA thrust loads for NSS equipment.
 - 4.10. Establish jet impingement forces during LOCA.
 - 4.11. Specify number and size of internals vent valves.
 - 4.12. Specify number and size of Core Flood tanks.
 - 4.13. Specify mass and energy release rates for building design.
 - 4.14. Specify building design pressure, temperature, volume and cooling requirements.
 - 4.15. Specify building subcompartment design requirements including venting area.
 - 4.16. Preparation of LOCA input for SAR's and review of appropriate SAR sections.
 - 4.17. Establish LOCA limits.
5. Keep line and Project Management advised of work status and identification of problem areas requiring their participation in resolution.

C. PROPOSALS

1. Review appropriate sections of customer's bid specifications, identify deviations, and provide resource estimate to satisfy deviation.
2. Develop and maintain standard ECCS related descriptive material for Proposals.
3. Provide Marketing support by technical presentations.

APPENDIX E
SYSTEM MECHANICAL ANALYSIS

DRAFT

I. GENERALA. STANDARDS

1. Perform the structural analysis necessary to predict the dynamic and static loadings imposed on components and supports of the Reactor coolant System by thermal expansion, dead weight, seismic vibrations, and loss-of-coolant accident conditions.
2. Prepare and issue "Reactor Coolant System Foundation & Nozzle Loading Specification: (1235).
3. Develop and supply conceptual design layout drawings of RCS supports and restraints.
4. Perform the simplified stress analysis of the primary coolant system piping required by ASME Section III, and issue a piping stress report showing the results of this analysis.
5. Generate and issue seismic response spectra for points where customer supplied piping attaches to the component of the reactor coolant system.
6. Supply input to Safety Analysis Reports and respond to NRC licensing questions as necessary to describe and justify the criteria, methods, and models utilized to predict the structural response of the reactor coolant system to seismic LOCA, thermal, and weight conditions.
7. Supply to the appropriate NPGD organizations, detailed seismic and LOCA response data for the design of R.V. Internals, Fuel Assemblies, CRDM's, and R.C. pumps and motors.
8. Provide support to Marketing and Product Development in standardizing B&W's product line and identifying the cost of changes.
9. Prepare and maintain standard cost estimates and other documentation as required by product development.
10. Manage and develop the analysis and design activities needed to predict the structural response of the reactor coolant system to static and dynamic loading conditions. This responsibility includes providing the leadership, manpower, schedules, plans and budgets to efficiently evaluate and justify the structural adequacy of the reactor coolant system equipment.

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I. GENERAL (cont'd)A. STANDARDS (cont'd)

11. Participate on ASME and other code committees to establish B&W's position on technical matters and to develop industry standards for structural analysis.
12. Participate in the development of QA and Management Information system.

B. CONTRACTS

1. Review and evaluate information received from or transmitted to the customer/AE, or other B&W organizations that affects the structural characteristics of the RCS.
2. Perform special studies and analyses to assist customer/AE in resolving technical or licensing problems.
3. Support resolution of site problems.
4. Provide support for International projects.
5. Identify and participate in the resolution of risk items.
6. Manage the applicable WBS tasks to perform in accordance with NSS contract requirements - including costs and scheduling considerations.

C. PROPOSALS

1. Review customer bid specifications and identify deviations from Standard.
2. Provide cost estimates and recommend design changes to accommodate individual customers.
3. Support Marketing by providing and/or presenting technical data as required.

APPENDIX F

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INTERNATIONAL PROGRAM INTEGRATIONI. GENERAL

The International Program Integration Unit (IPI) is responsible for Integration of B&W's Engineering Department activities and selected Project Engineering Task for Babcock-Brown-Boveri GmbH (BBR) contracts. The International Program Integration Unit (IPI) carries out the integration functions by interface relationships with various Engineering Department Units and the BBR interface is conducted through the International Program Management (IPM) Department.

II. OBJECTIVES

1. Maximize the use of proven B&W design on Muelheim-Kaerlich and follow on contracts, except where differences are mandated by German Law, Contract Requirements, or German "State of the Art" practices required by the Customer or Regulatory Agencies.
2. Maximize use of B&W-USA resources and experience to deliver Muelheim-Kaerlich and follow on contracts for BBR in the minimum reasonable time and at the least reasonable cost.
3. Expedite engineering planning and follow up actions in support of BBR, including establishing priorities, definition of tasks, and establishing special methods and procedures to accelerate NPCD activities on BBR commitments.
4. Assist in the identification and resolution of problems concerning the ability of BBR to meet its priority commitments.
5. Form, guide, review, and approve technical information and work that flows between NPCD to or from BBR, via International Program Management (IPM).

III. RESPONSIBILITIES

The specific responsibilities of Internal Program Integration are:

Coordinate, schedule, integrate, and expedite and approve Engineering Department activities and information flow between B&W and BBR, and between internal B&W engineering units for BBR related activities. This function applies to Design Overview Program (DOP), Master Service, Licensing Agreement, Consulting Activities, and other Engineering activities as directed or negotiated with IPM.

Review, generate, or cause to be generated, DOP comments on BBR systems, components, or procedures as described in BBR documentation.

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APPENDIX F (cont'd)

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III. RESPONSIBILITIES (cont'd)

1. Resolve DOP comment differences, if necessary, between interfacing Engineering Department units.
2. Review of DOP comments produced by the Engineering Department units to insure technical adequacy.
3. Approval of final DOP comments for transmittal to BBR.
4. Initiate, formulate, and recommend team members for Special Purpose Reviews (SPR's) for systems, components, and problem areas. IPI shall provide scope, guidance, and support to SPR members. IPI personnel will comprise at least one member of the SPR team, unless this function is delegated to an Engineering Department unit.
5. Recommend to BBR via IPM addition or deletion system, component, or problem documentation to the DOP.
6. Perform integration and review activities to assure technical adequacy, accuracy and completeness of Engineering Department technical information submitted to BBR.
7. Provide scheduling and resource estimates as required and requested by IPM.
8. Provide task descriptions to IPM with resource estimates and schedules to define DOP, Master Service, License Agreement, or Consulting Work.
9. Identify and define open items and critical open items and work with BBR and within the Engineering Department to schedule strategy, and resolve all open items. Maintain status of open items and critical open items with IPM.
10. Prepare and maintain core analytical input requirements documentation.
11. Prepare or cause to be prepared contract documentation in accord with Engineering Department procedures to provide BBR with timely, documented, B&W initiated designs or design changes that directly affect the BBR design.
12. Develop and maintain technical awareness within IPI and the Engineering Department of the BBR design as follows:
 - a. Maintain understanding and documentation of all BBR systems and components that are within or closely related to the B&W domestic scope of supply.
 - b. Develop and maintain understanding of German Licensing Agreements and Licensing stipulation for Muehlheim-Kaerlich and follow-on contracts.

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APPENDIX F (cont'd)

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III. RESPONSIBILITIES (cont'd)

12. (cont'd)

c. Develop and maintain cognizance of status, problems, strategy of on-going technical activities at BBR. Cognizance of technical activities is to be developed and maintained by telephone and/or written contact with BBR engineers and by planned, scheduled visits with BBR personnel.

13. Participate with IPM, as required, in a sitance to BBR in preparation of proposals.

14. Originate, or cause to be initiated, internal design reviews of systems or components that are shared by the B&W and the BBR design and are critical to BBR warrantees, operational flexibility or schedule.

15. Follow Engineering Department procedures to obtain satisfactory, documented product for BBR.

IV. INTERFACE RELATIONSHIPS

International Program Integration (IPI) is an Engineering/Integration organization which interfaces internally with Units within the Engineering Department, and interfaces with BBR through the International Program Management (IPM) Department.

The IPI/IPM Interface responsibilities are:

1. IPI is responsible for intergration of all BBR related technical activities within the Engineering Department. In selected major task areas, IPI shall delegate responsibility to the cognizant Engineering Department Unit. In these delegated, major task, IPI shall maintain the integration function of review of interfaces, input requirements, input data, review and approval of the output of the cognizant Engineering Unit.

All formal IPI correspondence to BBR is through IPM, and subject to IPM operating procedures for communication and document control.

2. Interfacing responsibilities for Engineering Department Units includes the following:

a. IPI shall maintain "look ahead" schedules for the Engineering Units engaged in BBR support activities. These schedules shall be updated quarterly.

b. When task activities are required of Engineering Department Units, the cognizant IPI Engineer shall conduct negotiations with the Cognizant Engineering Department Unit or Units. These IPI/Unit negotiations shall define in writing, the Task definition (WTD), the

APPENDIX F (cont'd)IV. INTERFACE RELATIONSHIPS (cont'd)

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2.b. (cont'd)

input information required (WPD details), the resources required (WA), and the schedule (WA). When schedule conflicts occur, IPI shall escalate or cause to be escalated the concern to Engineering Management and IPM as required to achieve schedule resolution. Upon completion of task negotiation, critical items shall be entered in the appropriate management information system for visibility. Tasks of normal priority shall be entered in the scheduling action items program or appropriate IPM system. IPI shall assist all interface Units supporting a task in schedule and funding.