

**TOPICAL QUALITY ASSURANCE REPORT**

TQR 1.0

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1.1 GENERAL REQUIREMENTS

The Florida Power & Light (FPL) organizational structure shall be defined such that the responsibilities for establishment and implementation of the Quality Assurance Program are clearly identified. The authority and duties of individuals and organizations performing quality assurance and quality control functions shall be described, and shall illustrate the organizational independence and authority necessary to identify problems; to initiate, recommend, or provide solutions; and to verify implementation of solutions. In addition, the description shall illustrate that persons or groups responsible for verifying the correct performance of an activity are independent of the person or groups responsible for performing the activity.

1.2 RESPONSIBILITY

The FPL Chairman of the Board and Chief Executive Officer is ultimately responsible for the execution of the Quality Assurance Program for FPL nuclear power plants. Authorities for developing and verifying execution of the program are delegated to the President Nuclear Division and the Director Nuclear Assurance, respectively.

The President Nuclear Division has overall responsibility for the Nuclear Division's activities including corporate responsibility for overall plant nuclear safety.

The Vice President - St. Lucie Plant and Vice President - Turkey Point Plant are accountable for the operation, maintenance, and modification of their respective nuclear plant. The plant Vice Presidents have overall responsibility for implementation of the Environmental Protection Plans at their respective sites.

The Plant General Manager - PSL and Plant General Manager - PTN, through the respective plant Vice President, are responsible for the safe operation of the nuclear plant.



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The Director Nuclear Assurance is responsible for verifying execution of the FPL Quality Assurance Program and initiating Quality Assurance policy and program changes when necessary. The Director Nuclear Assurance is also responsible for the Nuclear Safety Speakout program (employee concerns program) and administration of the Company Nuclear Review Board (CNRB) Subcommittee. The Director Nuclear Assurance serves as the CNRB chairman.

The Vice President Nuclear Engineering is responsible for nuclear plant design and engineering support.

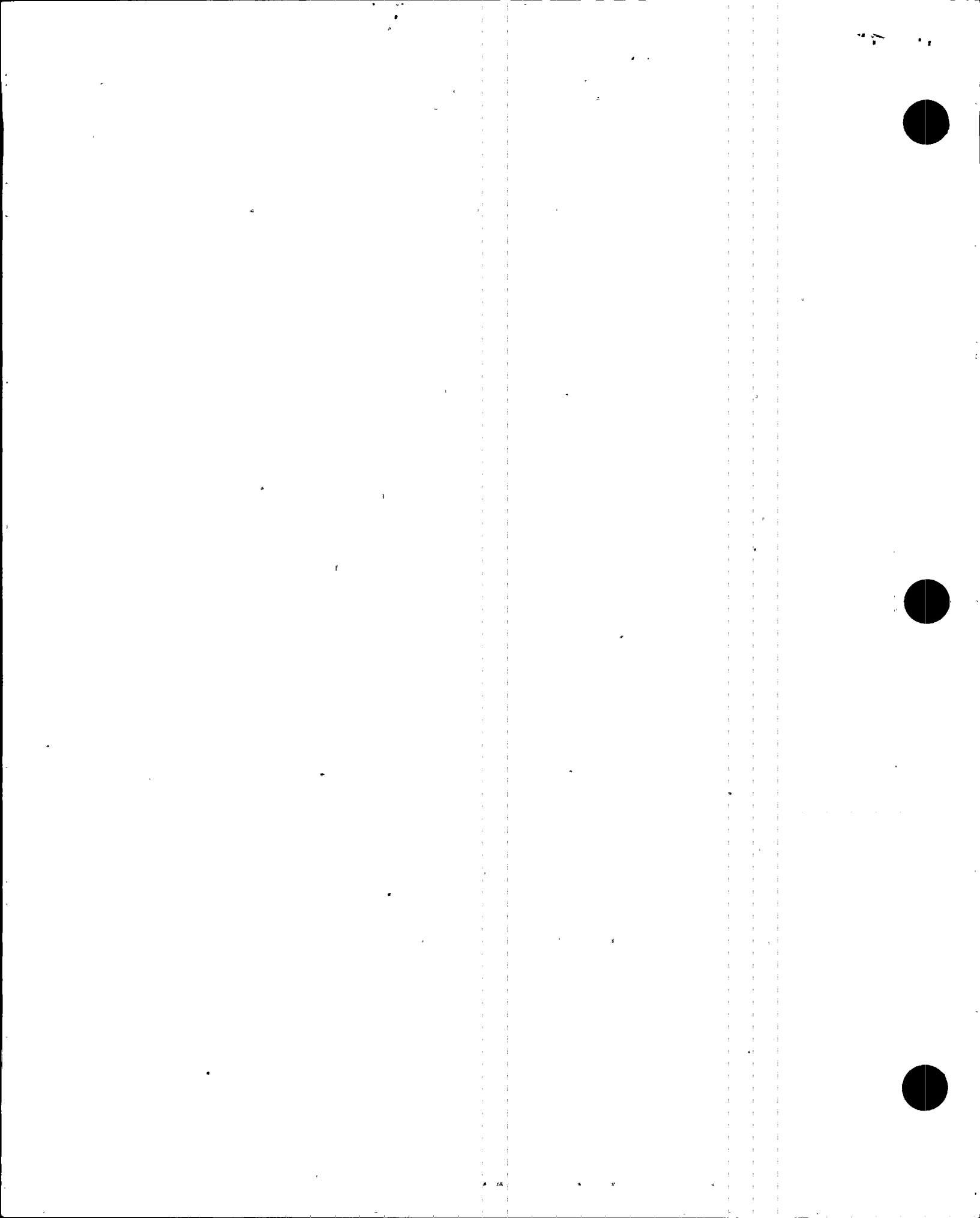
The Manager Nuclear Licensing and Special Programs is responsible for selected licensing support activities and other assigned programs at the Juno Beach Office.

The Director Nuclear Business Services is responsible for Nuclear Division business and financial planning and analysis and nuclear plant support in the areas of document control and QA records management, division-based and staff computer systems, security, emergency preparedness, and radiological services.

The Director of Protection & Control Systems is responsible for test, calibration and maintenance of certain high voltage electrical protective relays for safety related systems of the nuclear plant and for related support functions.

The Director Environmental Services is responsible for providing technical support on environmental regulatory matters.

The Vice President of Information Management is responsible for ensuring the integrity of the computer operating environment and the applications used by the Nuclear Division.



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The Corporate Records Supervisor is responsible for storage, retrieval and control of Quality Assurance records received from the nuclear plants and corporate office. The Corporate Records Supervisor also serves as the Records Official and chairman of the Quality Assurance Records Storage Evaluation Team (QARSET).

The head of each department or organization performing activities affecting quality is responsible for: a) identifying those activities within the organization which affect quality as defined by the Quality Assurance Program; b) establishing and clearly defining the duties and responsibilities of personnel within their organization who execute those activities affecting quality; and c) planning, selecting, and training personnel to meet the requirements of the Quality Assurance Program. The responsibility, authority, and organizational relationship for performing activities affecting quality within each organization shall be established and delineated in procedures, organizational charts and written job or functional descriptions.

Activities affecting quality may be performed by FPL or be contracted. Should any of these functions be contracted, the contractor may perform the activities under their own Quality Assurance Program, which must have prior approval by FPL Quality Assurance, or the contractor may directly adopt the requirements of the FPL Quality Assurance Manual. If the contractor implements the Quality Control function directly to the FPL Quality Assurance Manual requirements, the contractor's Quality Control Supervisor shall have the authority and freedom to administer the Quality Control program.



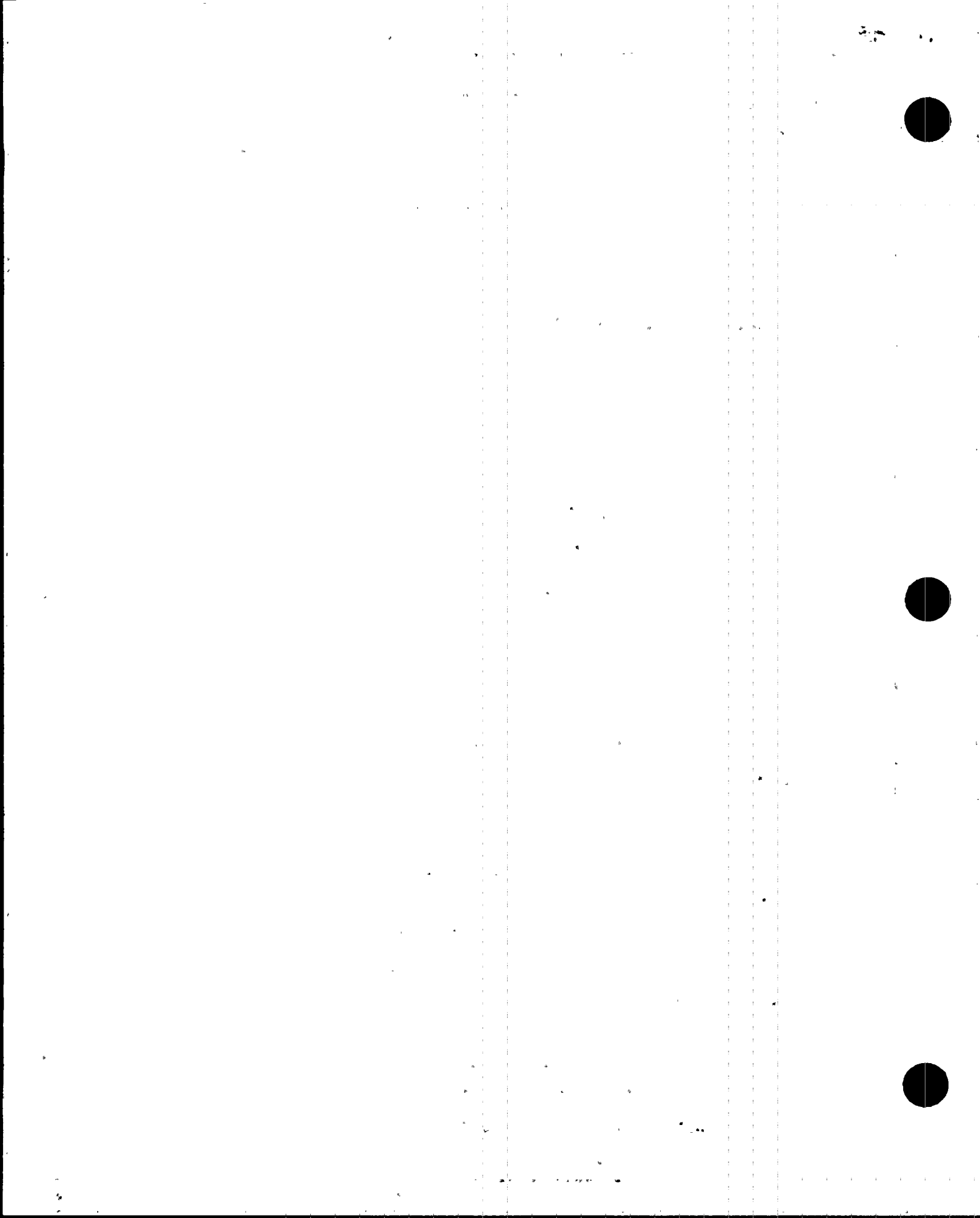


1.3 ORGANIZATIONAL RELATIONSHIPS

The organizational charts in Appendix A show the lines of authority, responsibility and communication from the highest management level through intermediate levels to, and including the on-site operating organizations.

The Plant General Managers have control of the on-site resources necessary for the safe operation and maintenance regardless of organizational reporting.

The organizational freedom of the Quality Assurance function is accomplished through the corporate structure, illustrated in Appendix A, which provides independence from those departments responsible for design, procurement, engineering, construction and operation. With quality assurance as its sole function, the Quality Assurance Department, both on-site and off-site, is completely free from the cost and scheduling pressures of design, procurement, construction and operation. The Quality Assurance Department has the freedom and authority to: a) identify quality problems; b) initiate, recommend or provide corrective action; c) verify implementation of the corrective action; and d) recommend the stoppage of work or operations adverse to quality, when necessary. The QA Supervisor Performance Assessment, QA Supervisor Procurement Quality, Quality Manager - St. Lucie, and Quality Manager - Turkey Point report administratively and functionally to the Director Nuclear Assurance. These reporting relationships assure that the Quality Assurance Department has direct access to the levels of management necessary to assure effective implementation of the Quality Assurance Program.



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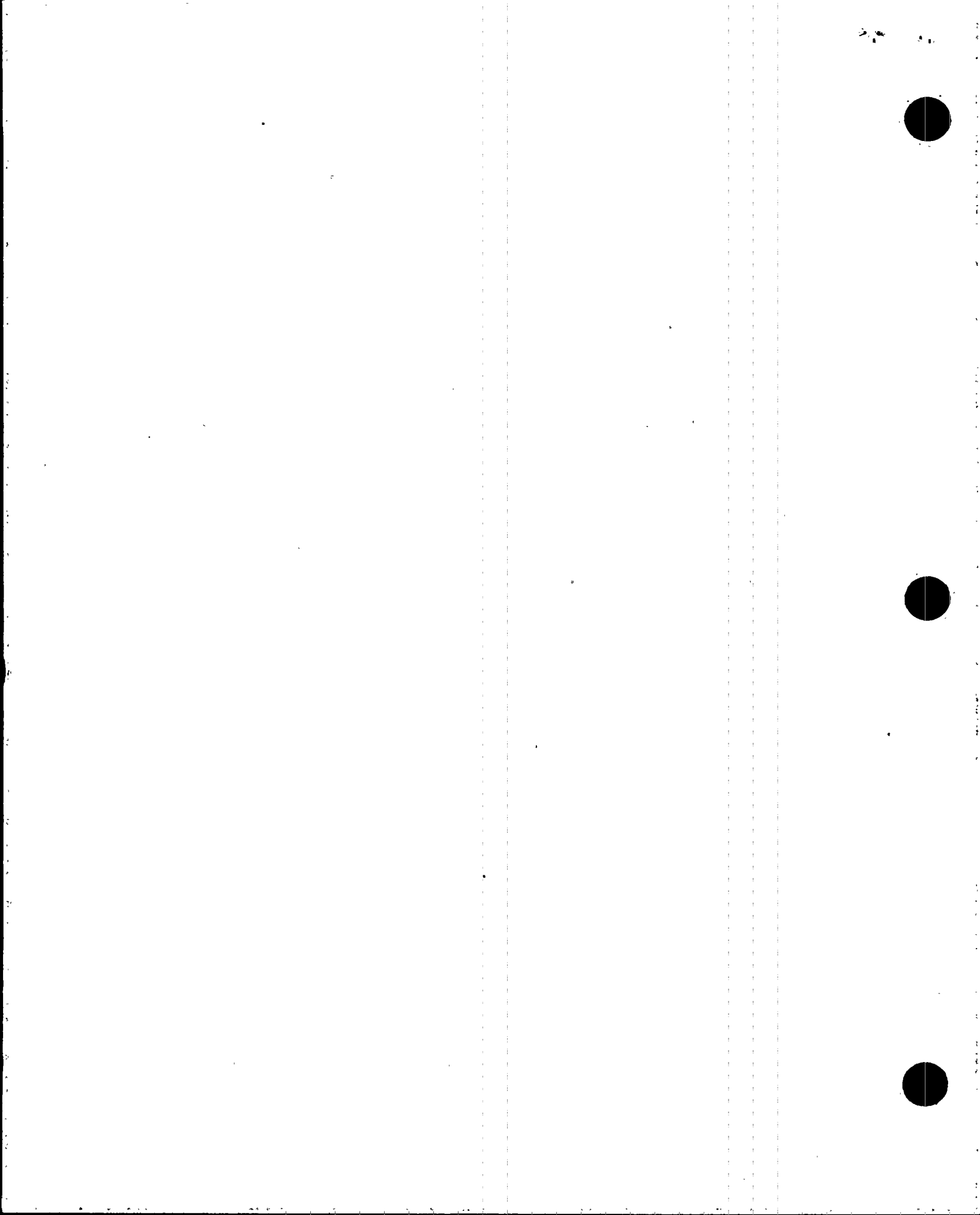
1.4 REVIEW AND AUDIT COMMITTEES

The Plant Nuclear Safety Committee (PNSC) at Turkey Point Plant and the Facility Review Group (FRG) at the St. Lucie Plant are comprised of key plant management and staff personnel as described in the plant Technical Specifications. The PNSC/FRG serves the Plant General Manager in a technical advisory capacity for the review of all safety related procedures and activities that impact plant safety and the facility operating license.

The Company Nuclear Review Board (CNRB), reporting to the President Nuclear Division, is comprised of executive level members of management with responsibilities for the execution of the Quality Assurance Program. The CNRB composition is described in Section 6.0 of each facility's Technical Specifications. Subjects within the purview of the CNRB are listed in the appropriate plant Technical Specifications. The CNRB has the authority to carry out its responsibilities by way of written action letters, verbal directions, meeting minutes or appointed subcommittees. Where necessary, the CNRB may use consulting services to perform required reviews. Periodic audits of the Quality Assurance Department are performed by a team independent of the Quality Assurance Department. The results of these audits are presented to the CNRB.

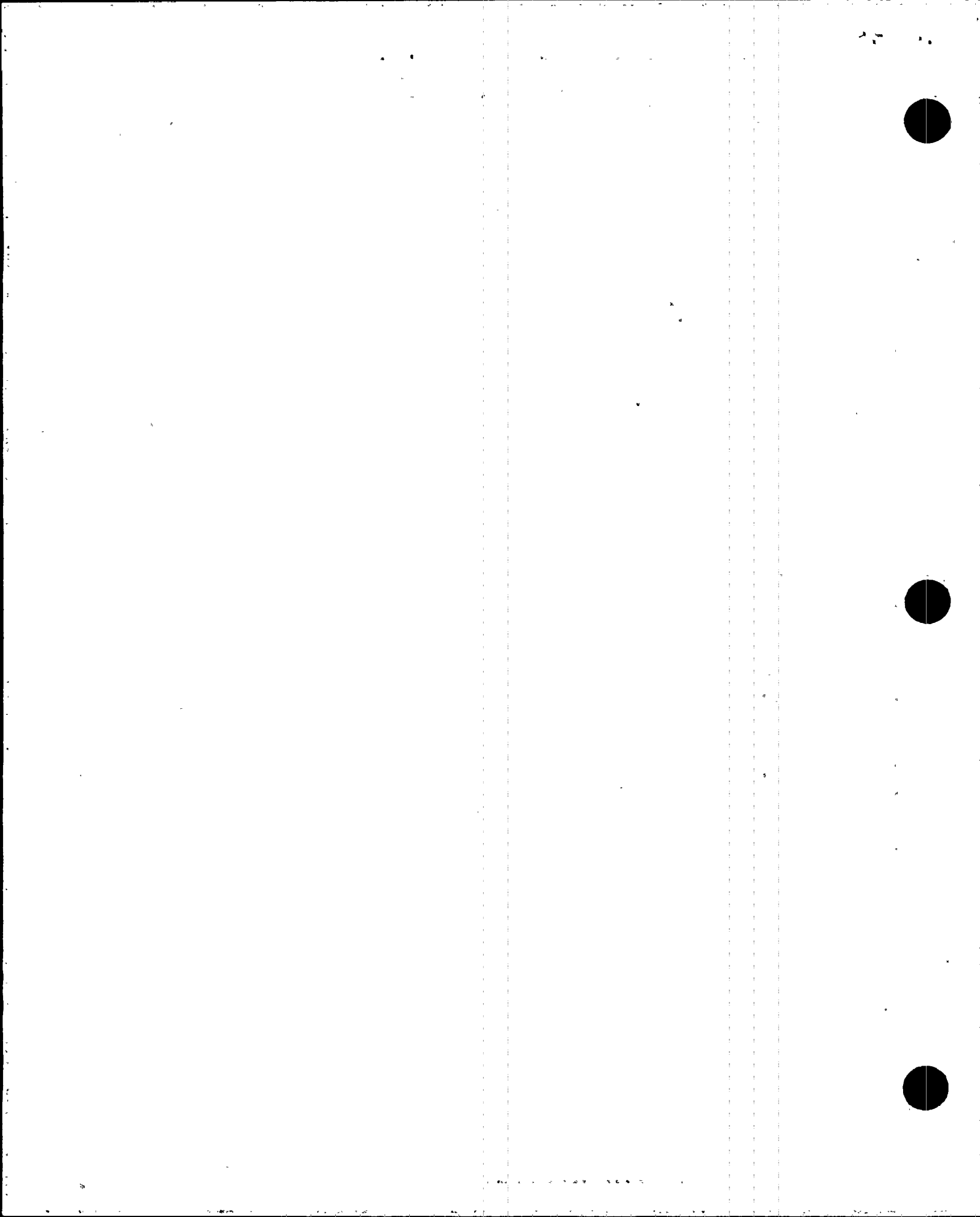
A Quality Assurance Program Review Committee (QAPRC) has been established to review changes to the Quality Assurance Program and to provide an interface for quality matters in each department affecting quality. The QAPRC is an interdepartmental organization with the responsibility to review and resolve recommended changes to the Quality Assurance Program. This committee is administered by the Quality Assurance Performance Assessment group.

A Quality Assurance Program Review Committee (QAPRC) Member shall be designated by the head of each department or organization. The QAPRC Member is the prime interface for coordination of quality matters within the member's department, with the Quality Assurance Department, and with other departments.



ATTACHMENT B

TQR 1.0
Revision 30
Current Revision



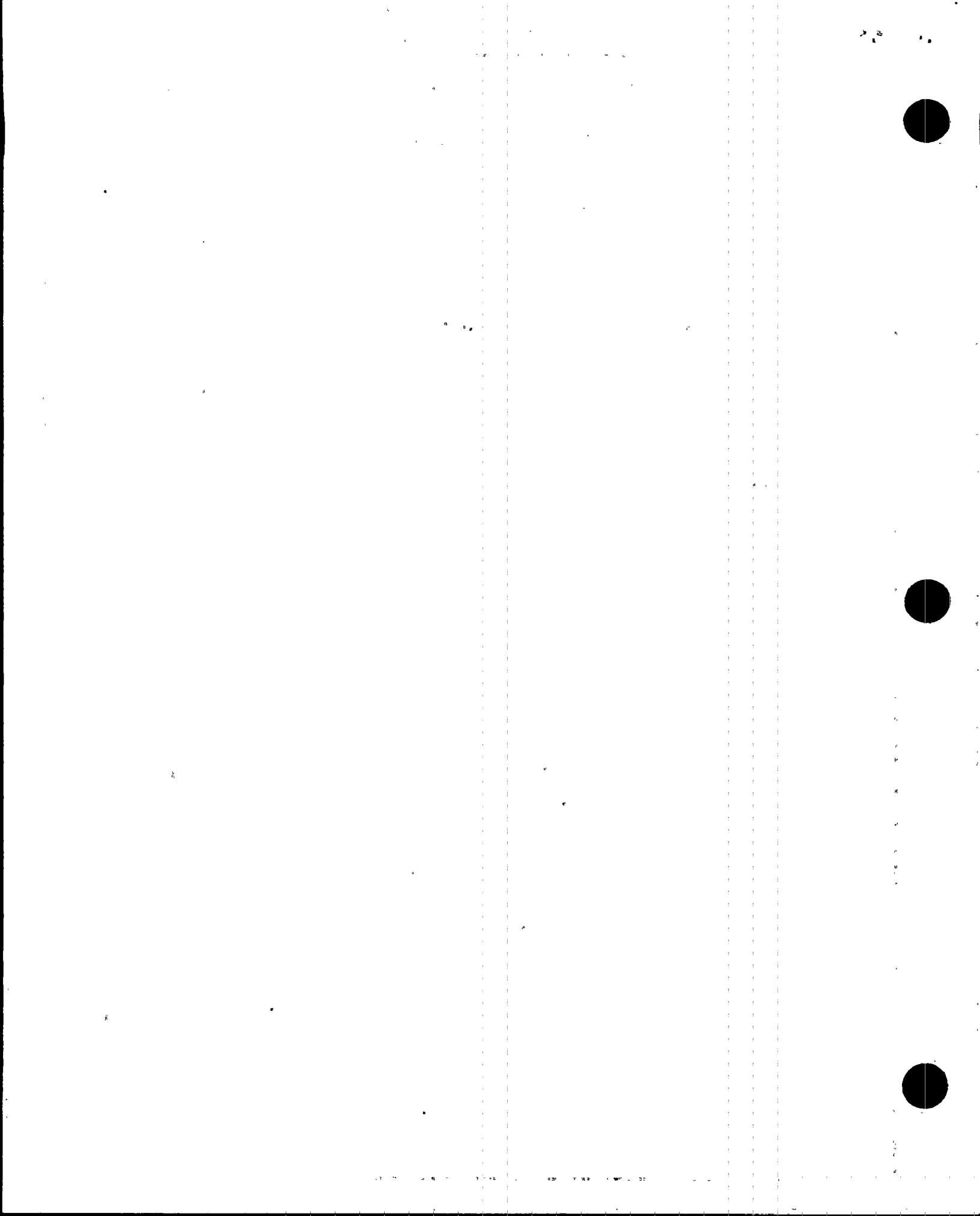
**TOPICAL QUALITY ASSURANCE REPORT****TQR 1.0****ORGANIZATION****Rev. 30****Date 03/28/97****Page 1 of 20****1.1 GENERAL REQUIREMENTS**

The Florida Power & Light (FPL) organizational structure shall be defined such that the responsibilities for establishment and implementation of the Quality Assurance Program are clearly identified. The authority and duties of individuals and organizations performing quality assurance and quality control functions shall be described, and shall illustrate the organizational independence and authority necessary to identify problems; to initiate, recommend, or provide solutions; and to verify implementation of solutions. In addition, the description shall illustrate that persons or groups responsible for verifying the correct performance of an activity are independent of the person or groups responsible for performing the activity.

1.2 IMPLEMENTATION

The FPL Chairman of the Board and Chief Executive Officer is ultimately responsible for the execution of the Quality Assurance Program for FPL nuclear power plants. The authority for developing and verifying execution of the program is delegated to the President Nuclear Division and the Director Nuclear Assurance. The reporting relationship of each department involved with the Quality Assurance Program is shown in Appendix A.

To provide for a review and evaluation of Quality Assurance Program policies and activities, the President Nuclear Division has established the Company Nuclear Review Board (CNRB). This organization's responsibilities are defined in Section 1.3.1.



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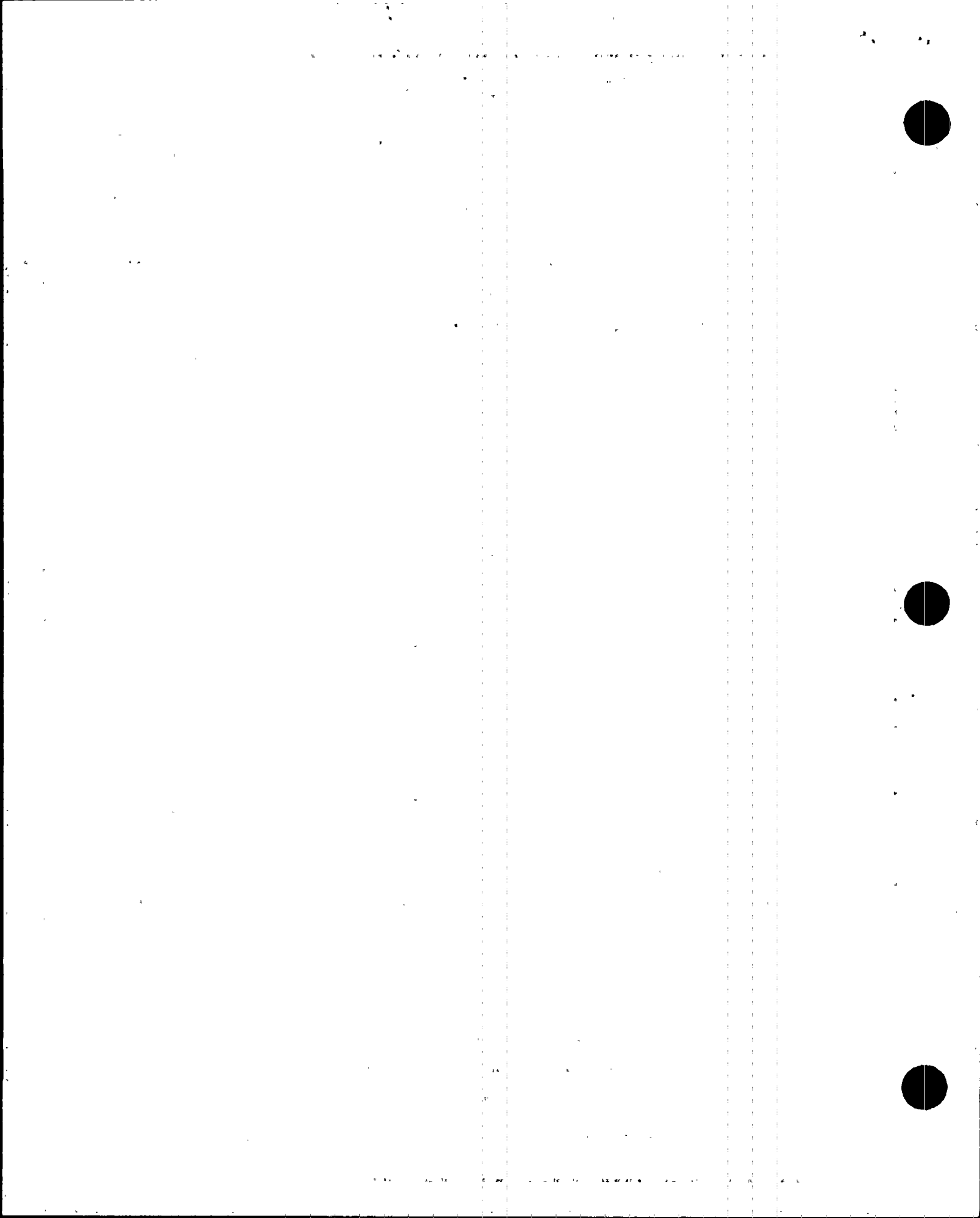
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In addition, a Quality Assurance Program Review Committee (QAPRC) has been established to review changes to the Quality Assurance Program and to provide an interface for quality matters in each department affecting quality. The QAPRC is an interdepartmental organization with the responsibility to review and resolve recommended changes to the Quality Assurance Program. This committee is administered by the Quality Assurance Performance Assessment group. Quality Assurance Program changes reviewed by the QAPRC are reviewed and signed by the affected department heads.

A Quality Assurance Program Review Committee (QAPRC) Member shall be designated by the head of each department or organization. The QAPRC Member is the prime interface for coordination of quality matters within the member's department, with the Quality Assurance Department, and with other departments.

The head of each department or organization performing activities affecting quality is responsible for: a) identifying those activities within the organization which affect quality as defined by the Quality Assurance Program; b) establishing and clearly defining the duties and responsibilities of personnel within his organization who execute those activities affecting quality; and c) planning, selecting, and training personnel to meet the requirements of the Quality Assurance Program. The responsibility, authority, and organizational relationship for performing activities affecting quality within each organization shall be established and delineated in organizational charts and written job or functional descriptions.



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Activities affecting quality may be performed by FPL or be contracted. Should any of these functions be contracted, the contractor may perform the activities under his own Quality Assurance Program, which must have prior approval by FPL Quality Assurance, or the contractor may directly adopt the requirements of the FPL Quality Assurance Manual. If the contractor implements the Quality Control function directly to the FPL Quality Assurance Manual requirements, the contractor's Quality Control Supervisor shall have the authority and freedom to administer the Quality Control program.

1.3 RESPONSIBILITIES

The organization charts in Appendix A illustrate the lines of authority and areas of responsibility for each of the organizations that are involved in activities affecting quality. Below are listed the departments and organizations that have quality assurance responsibilities. Organizational responsibilities for implementation of the Quality Assurance Program are described in the Topical Quality Requirements (TQRs).

1.3.1 Nuclear Division**1.3.2 Support Departments**

1.3.1.1 Plant Vice Presidents

1.3.2.1 Corporate Records

1.3.1.2 Licensing and Special Programs

1.3.2.2 Environmental Services

1.3.1.3 Nuclear Engineering

1.3.2.3 Protection & Control Systems

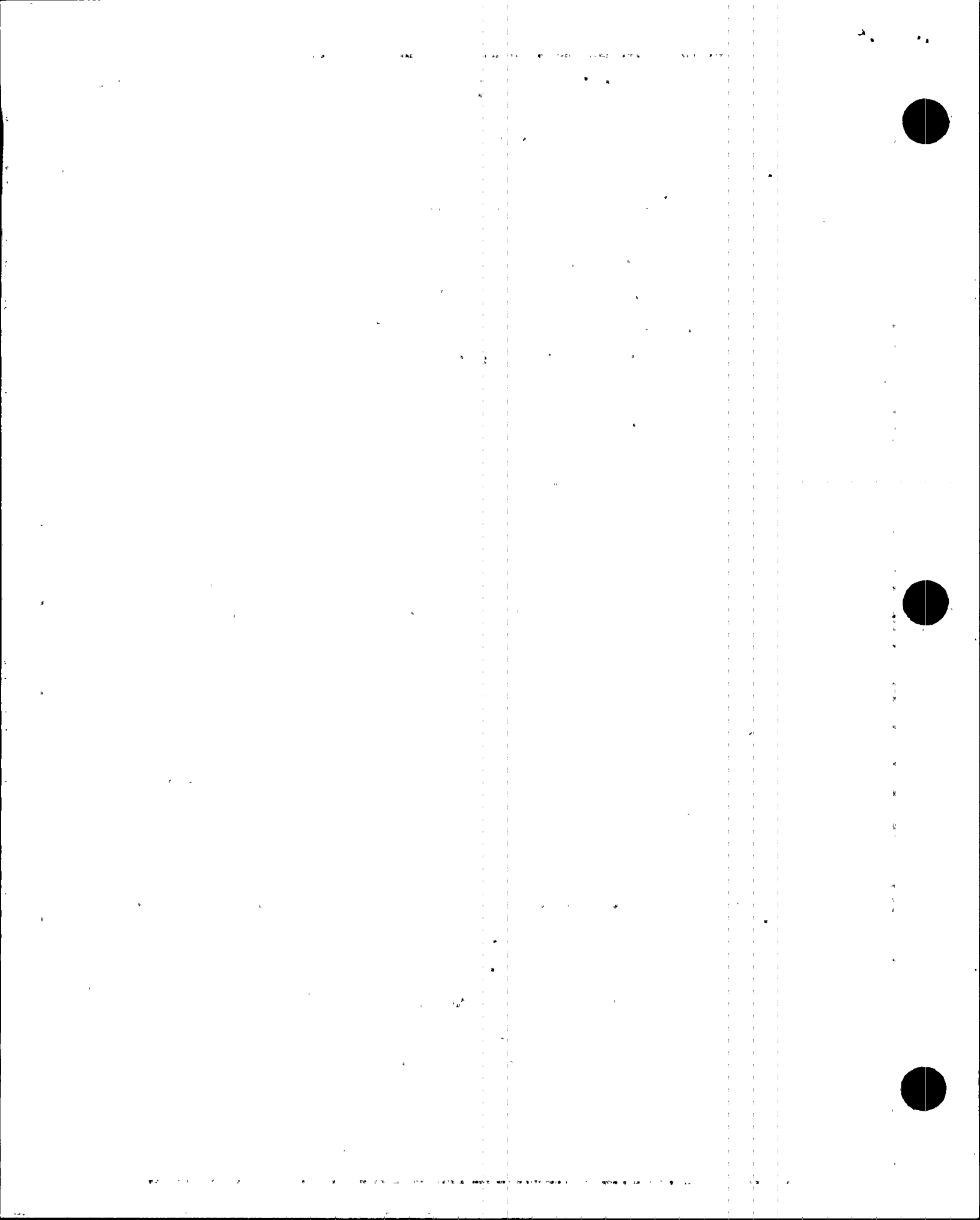
1.3.1.4 Nuclear Assurance

1.3.2.4 Information Management

1.3.1.5 Nuclear Business Services

1.3.1 Nuclear Division

Throughout plant life, the Nuclear Division maintains control of and responsibility for nuclear power plant design, preoperational and start-up testing, operation, maintenance, refueling, and modification of the plant in accordance with written and approved procedures.



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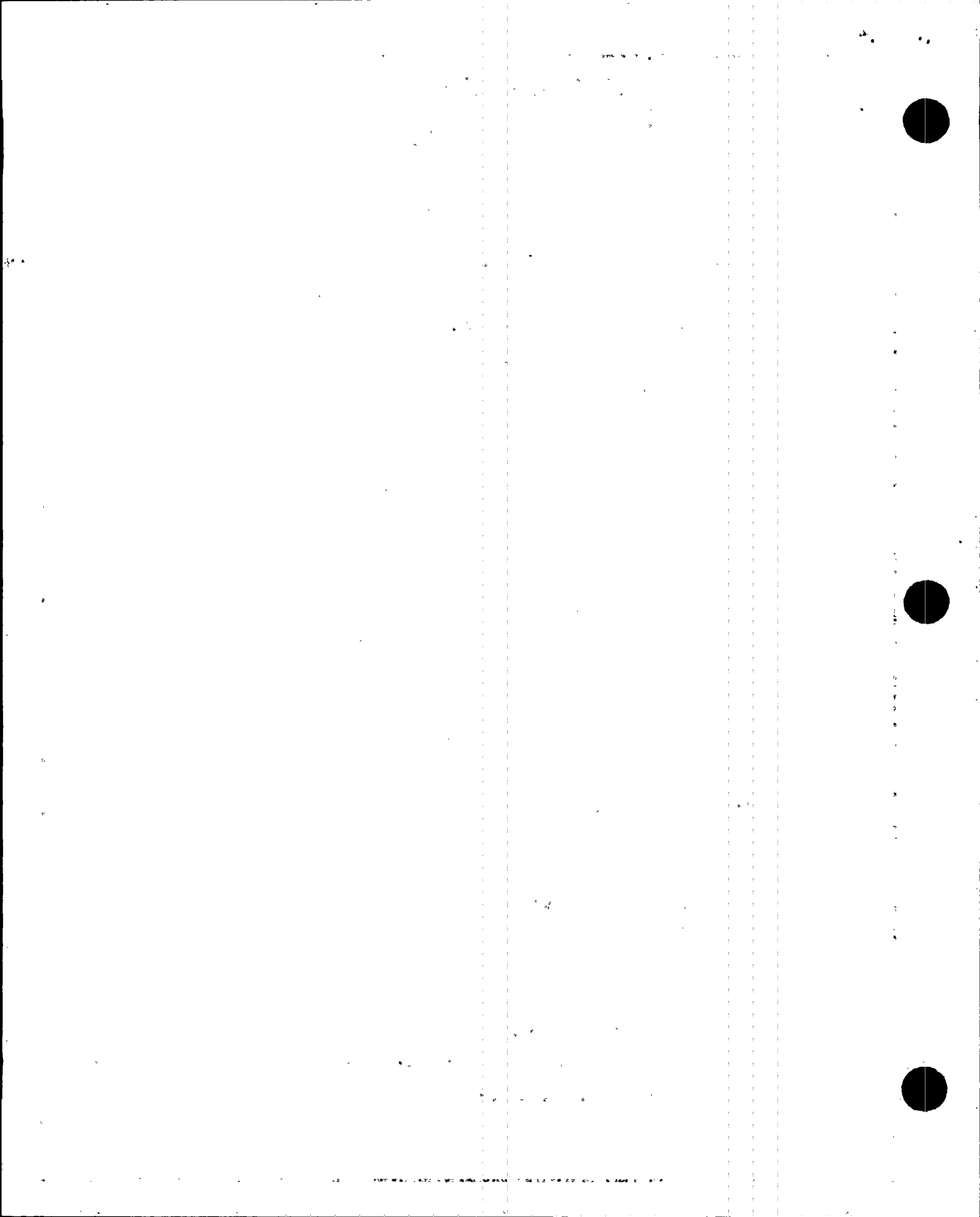
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The President Nuclear Division has overall responsibility for the Nuclear Division's activities including corporate responsibility for overall plant nuclear safety. Reporting to the President Nuclear Division are: the Vice President - Turkey Point Plant, Vice President - St. Lucie Plant, Director Nuclear Assurance, Vice President Nuclear Engineering, Manager of Licensing and Special Programs, and the Director Nuclear Business Services.

The Company Nuclear Review Board (CNRB), reporting to the President Nuclear Division, is comprised of executive level members of management with responsibilities for the execution of the Quality Assurance Program. The CNRB reviews, or directs the performance of reviews of, activities concerning the technical aspects of the operating nuclear power plant insofar as they impact plant safety, the health and safety of the public, and laws, regulations and licensing commitments. In addition, audits of these areas are performed under the cognizance of the CNRB.

The CNRB composition is described in Section 6.0 of each facility's Technical Specifications. Subjects within the purview of the CNRB are listed in the appropriate plant Technical Specifications. The CNRB has the authority to carry out its responsibilities by way of written action letters, verbal directions, meeting minutes or appointed subcommittees. Where necessary, the CNRB may use consulting services to perform required reviews.

The CNRB is responsible for reviewing and evaluating Quality Assurance Program policies and activities. Quality Assurance Program status reports shall be periodically given by the Quality Assurance Department.



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CNRB meetings shall be held by the Chairman to keep members apprised of conditions including significant problems that require management attention. Periodic audits of the Quality Assurance Department shall be performed by a team independent of the Quality Assurance Department. The results of this audit are presented to the Director Nuclear Assurance and the CNRB.

1.3.1.1 Plant Vice Presidents

The Vice President - St. Lucie Plant and Vice President - Turkey Point Plant are accountable for the operation, maintenance, and modification of their respective nuclear plant, as well as the selection, development and direction of the assigned staff. They will act as liaison between the plants and corporate headquarters, and are accountable for ensuring that company policies and procedures are properly implemented and continued at the nuclear site, including procurement and control of material. The Plant Vice President has overall responsibility for implementation of the Environmental Protection Plans at their respective sites.

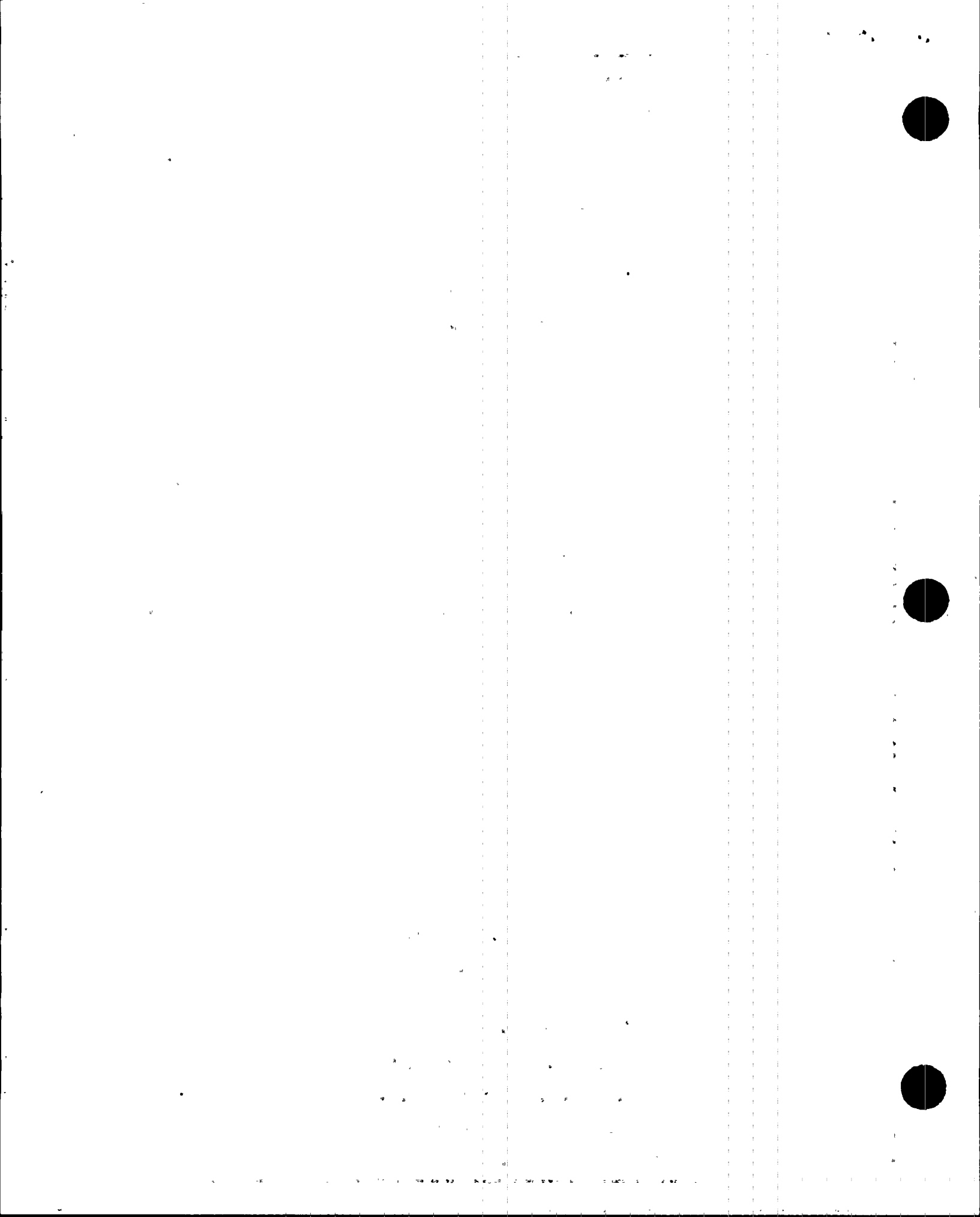
Other responsibilities of the site Vice President include the following:

Nuclear Services

- o Configuration management.

Nuclear Training

- o Preparation of policy documents regarding nuclear training;
- o Support to secure the necessary resources to ensure that site personnel are adequately trained. They must have adequate technical and job related skills to provide safe and efficient operation while complying with NRC requirements.





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Nuclear Security

- o Coordinate with the opposite plant site for overall development and implementation of the FPL Nuclear Security program.

Nuclear Business Systems

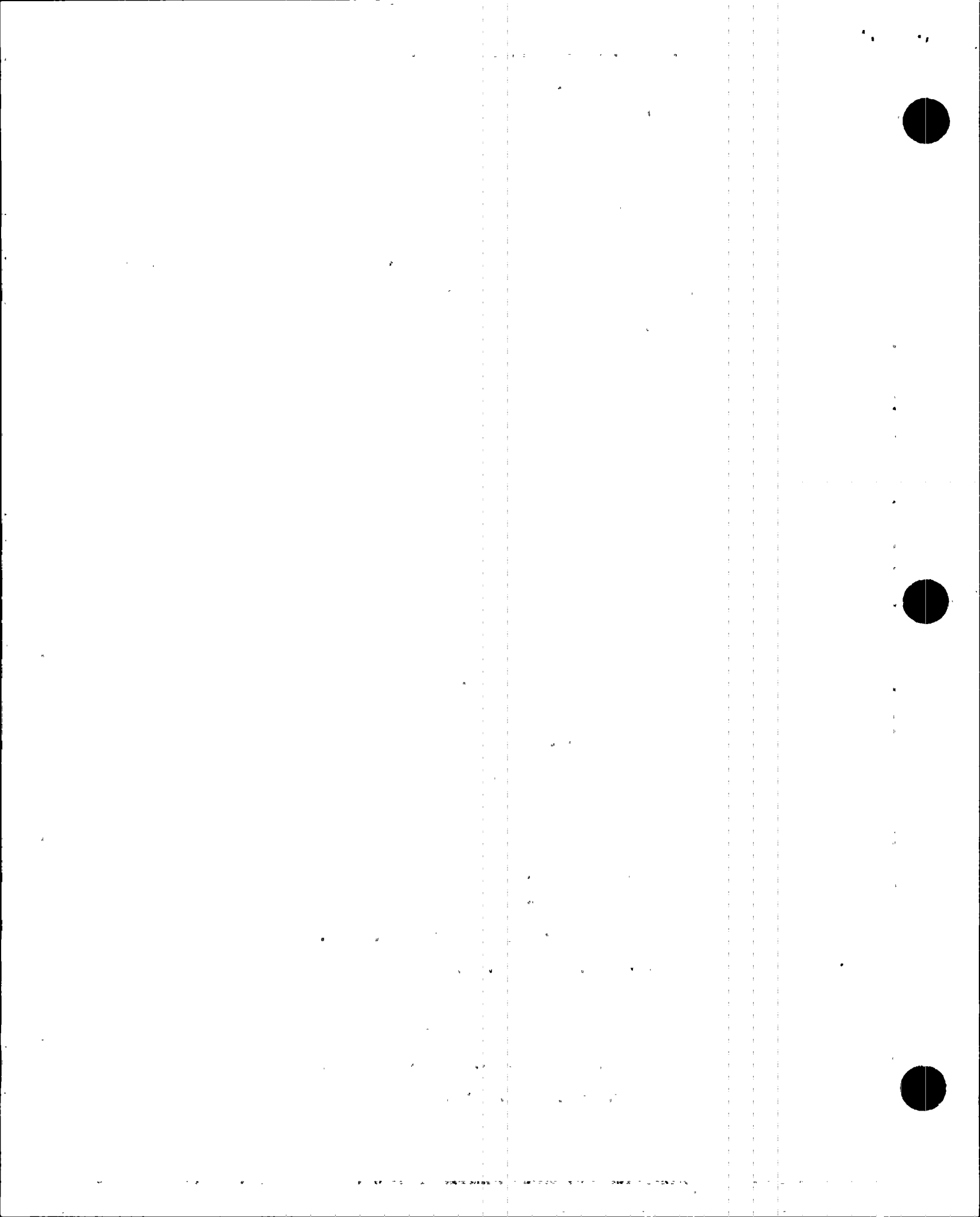
- o Coordinating contract activities.
- o Reviewing contracts to assure that technical and quality requirements developed by others are incorporated into the procurement documents which it authorizes.
- o Ensuring that site-based information management programs are in compliance with FPL software QA commitments.
- o Business Systems Departments at PSL and PTN are accountable for directing the identification, design, development, implementation, on-going maintenance, and control of all nuclear site specific data processing information management systems (excluding process applications), and identifying applicable site specific software in a Computer Software Index (CSI).

Nuclear Licensing

- o Maintenance of the operating license;
- o Interface with the NRC;
- o Resolution of NRC safety and regulatory issues;
- o Administering the Operating Experience and Feedback System.

Nuclear Materials Management

- o Negotiation, generation, issuance of procurement documents for required items and services supporting the operation, licensing, maintenance, notification, and inspection of FPL nuclear plants, and for materials and equipment to support Nuclear Division staff;



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- o Reviewing procurement documents to assure that technical and quality requirements developed by others are incorporated into the procurement documents which it authorizes.

The organization of Turkey Point Plant and St. Lucie Plant is shown in Appendix A.

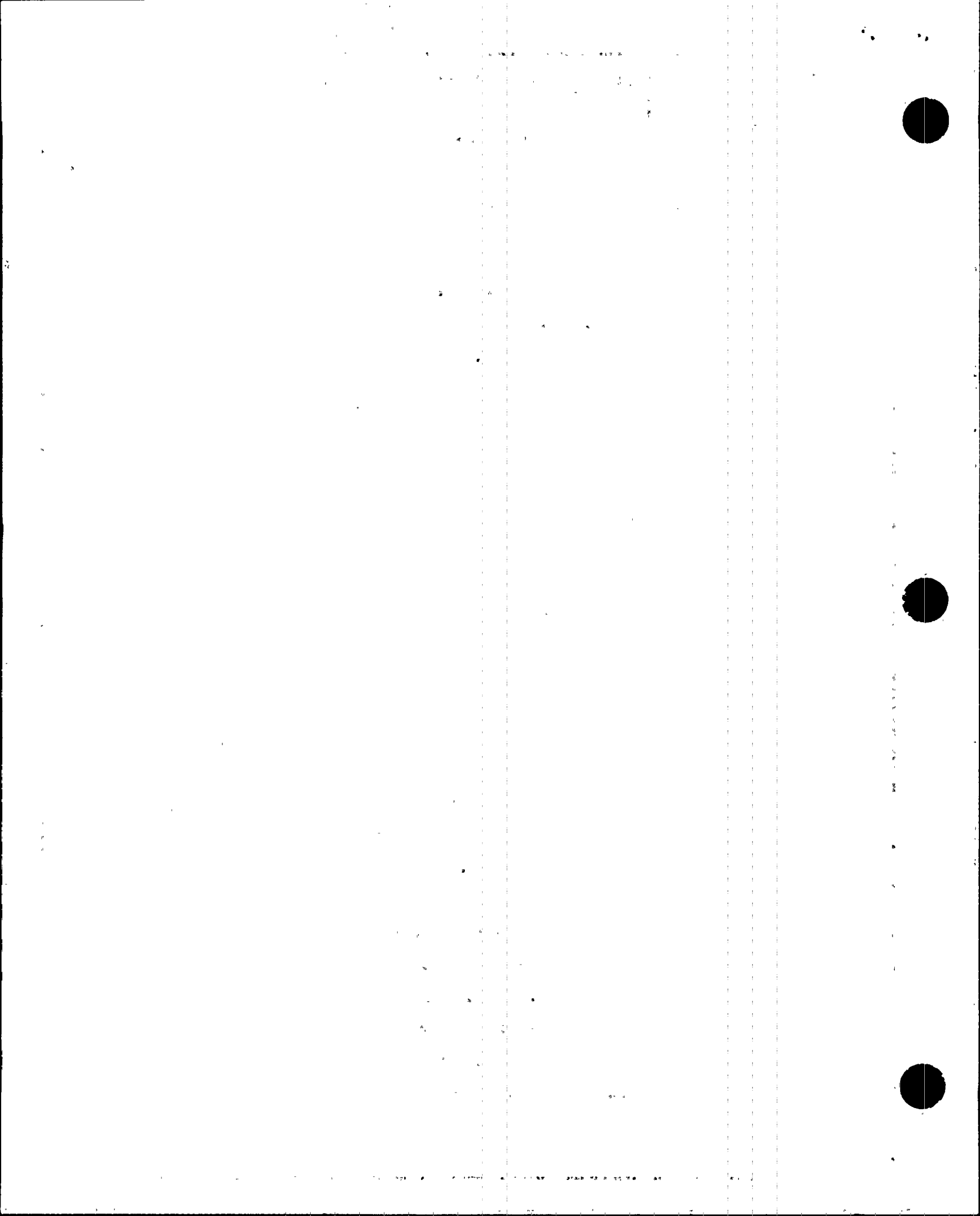
The Plant General Manager - PSL and Plant General Manager - PTN, through the respective Plant Vice President, are responsible for the safe operation of the nuclear plant. The Plant General Managers have control of the onsite resources necessary for the safe operation and maintenance regardless of organizational reporting.

The Plant Nuclear Safety Committee (PNSC) at Turkey Point Plant and the Facility Review Group (FRG) at the St. Lucie Plant are comprised of key plant management and staff personnel as described in the plant Technical Specifications. The PNSC/FRG serves the plant manager in a technical advisory capacity for the review of all safety-related procedures and activities that impact plant safety and the facility operating license.

1.3.1.2 Licensing and Special Programs

The Manager Licensing and Special Programs is responsible for selected licensing support activities at the Juno Beach Office. This includes:

- o Advising senior Nuclear Division management on a regular basis of important developments in licensing areas which could significantly affect the Nuclear Division;
- o Coordinating with the Law Department for Nuclear Division licensing hearings and legal services;



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- o Administering special programs, such as:
 - o Plant license renewal,
 - o Environmental issues,
 - o Self assessment,
 - o INPO coordination,
 - o Serving as FPL liaison in matters of high level waste disposal.

1.3.1.3 Nuclear Engineering

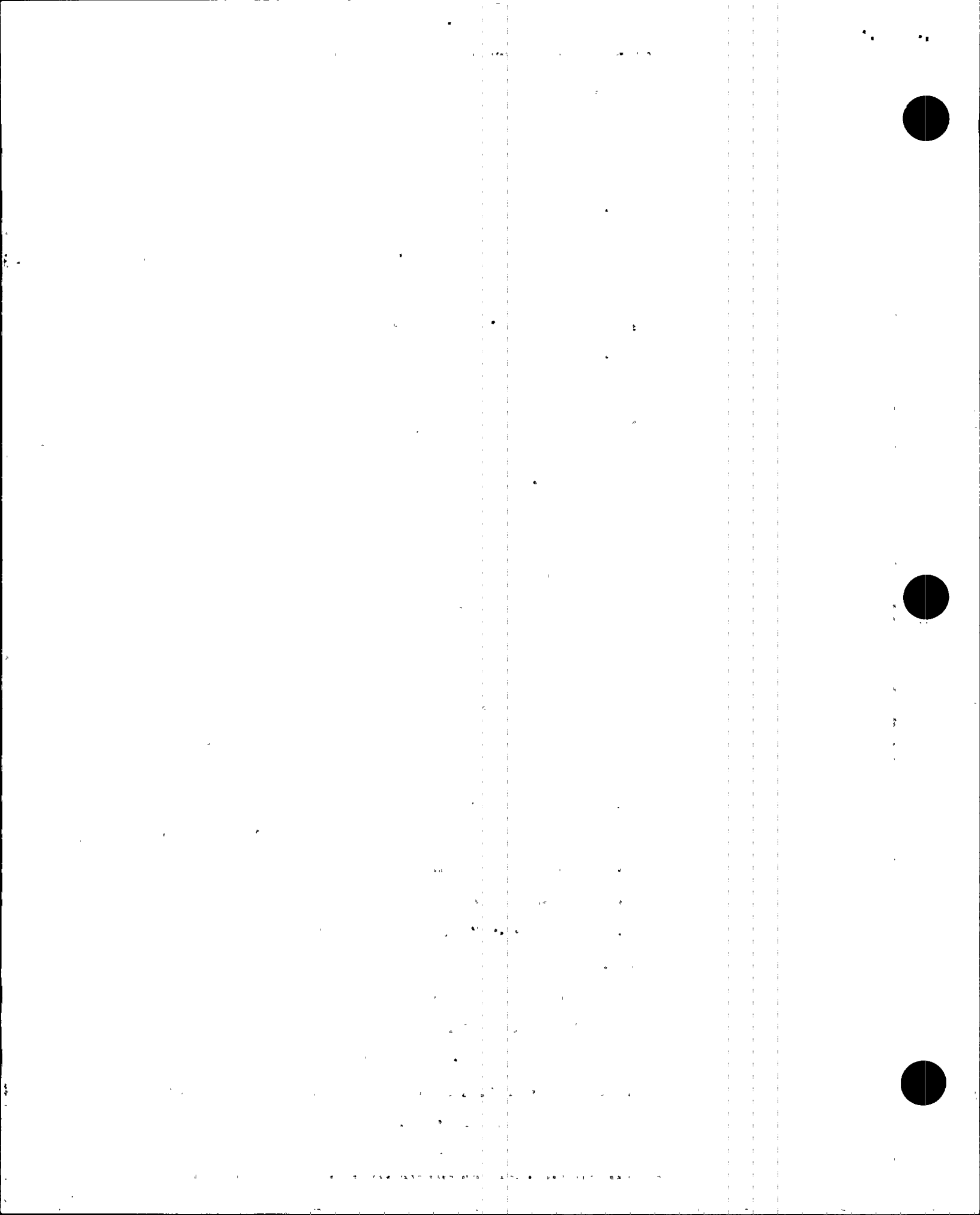
The Vice President Nuclear Engineering is responsible for nuclear plant design and engineering support.

The Nuclear Engineering organization is shown in Appendix A.

a. Nuclear Engineering

Nuclear Engineering includes personnel located at both nuclear sites and at the corporate office. Nuclear Engineering performs design-related activities and delegates design-related activities to qualified contractors. For activities performed by Nuclear Engineering, the work is governed by FPL's Quality Assurance Program, and Nuclear Engineering is responsible for approval of the design output.

Delegated activities are performed in accordance with an FPL approved Quality Assurance Program and the contractor is responsible for approval of design output. Nuclear Engineering is responsible for defining the scope of delegated activities and the responsibilities of the contractor. Prior to the release of design outputs by contractor organizations, Nuclear Engineering ensures that the contractor is technically qualified to perform the design-related activity.



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The Manager - Turkey Point Engineering and the Manager - St. Lucie Engineering provide on-site engineering support and direct the engineering aspects of all FPL nuclear power plant projects during construction and operation to assure efficient, economical and reliable power plant design, conformance with engineering schedules and budgets and compliance with regulatory requirements.

Nuclear Engineering is responsible for:

- o power plant design related aspects of the FPL Quality Assurance Program throughout all phases of plant life;
- o development and maintenance of the design control program governing design-related activities performed by Nuclear Engineering and for providing technical support to the Quality Assurance Department for assessing the adequacy, implementation and effectiveness of contractor design control programs;
- o the preparation, revision, approval and distribution of plant design records that are identified to be maintained as "as constructed" drawings during plant operation;
- o the development, control, and performance of certain aspects of items and services procurement, including establishment of procurement standards, the technical evaluation, equivalency evaluation, and commercial grade dedication of replacement parts/components for nuclear plants;
- o review of the technical and quality requirements in procurement requisitioning documents and changes thereto for safety related and quality related items and services, as well as configuration control activities for controlled design documentation associated with procurement. The review shall be performed by individuals other than the document originator;



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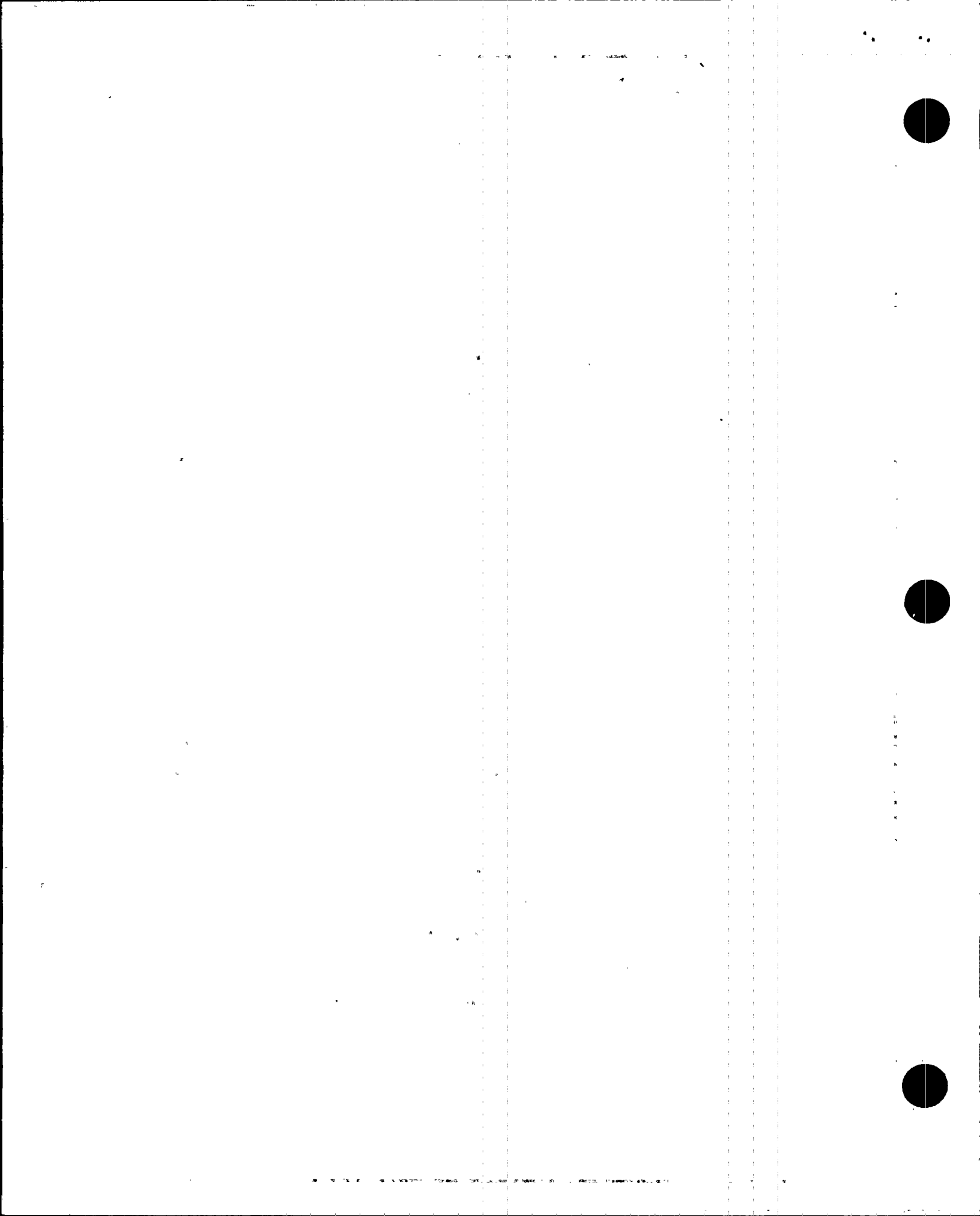
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Aspects of the above activities are performed by the Juno Beach Engineering organization as determined by the Vice President Nuclear Engineering.

b. Nuclear Fuel

The Manager Nuclear Fuel is responsible for nuclear fuel engineering and procurement activities including the following:

- o assuring that technical and quality requirements (including inputs from other FPL departments) are incorporated in fuel contracts and letters of authorization;
- o administering and managing contracts for nuclear fuel and related services to assure that technical and quality obligations are met, and serving as FPL liaison in all matters of nuclear fuel and fuel-related contracts;
- o administering and managing spent fuel disposal contracts with Department of Energy and serving as FPL liaison in matters of nuclear fuel;
- o all fuel related design, analyses, reviews, and technical assistance necessary to ensure the safe, reliable, and economic operation of the nuclear plants;
- o the development and/or review of fuel and nuclear physics design;
- o implementing and maintaining the FPL corporate nuclear material accountability program as outlined in the FPL Special Nuclear Material Control Manual;
- o providing support to the Quality Assurance Department for their auditing of nuclear fuel design and fuel assembly manufacturing;



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- o performing audits and coordinating accountability reporting on all nuclear fuel.

c. **Component Support and Inspections**

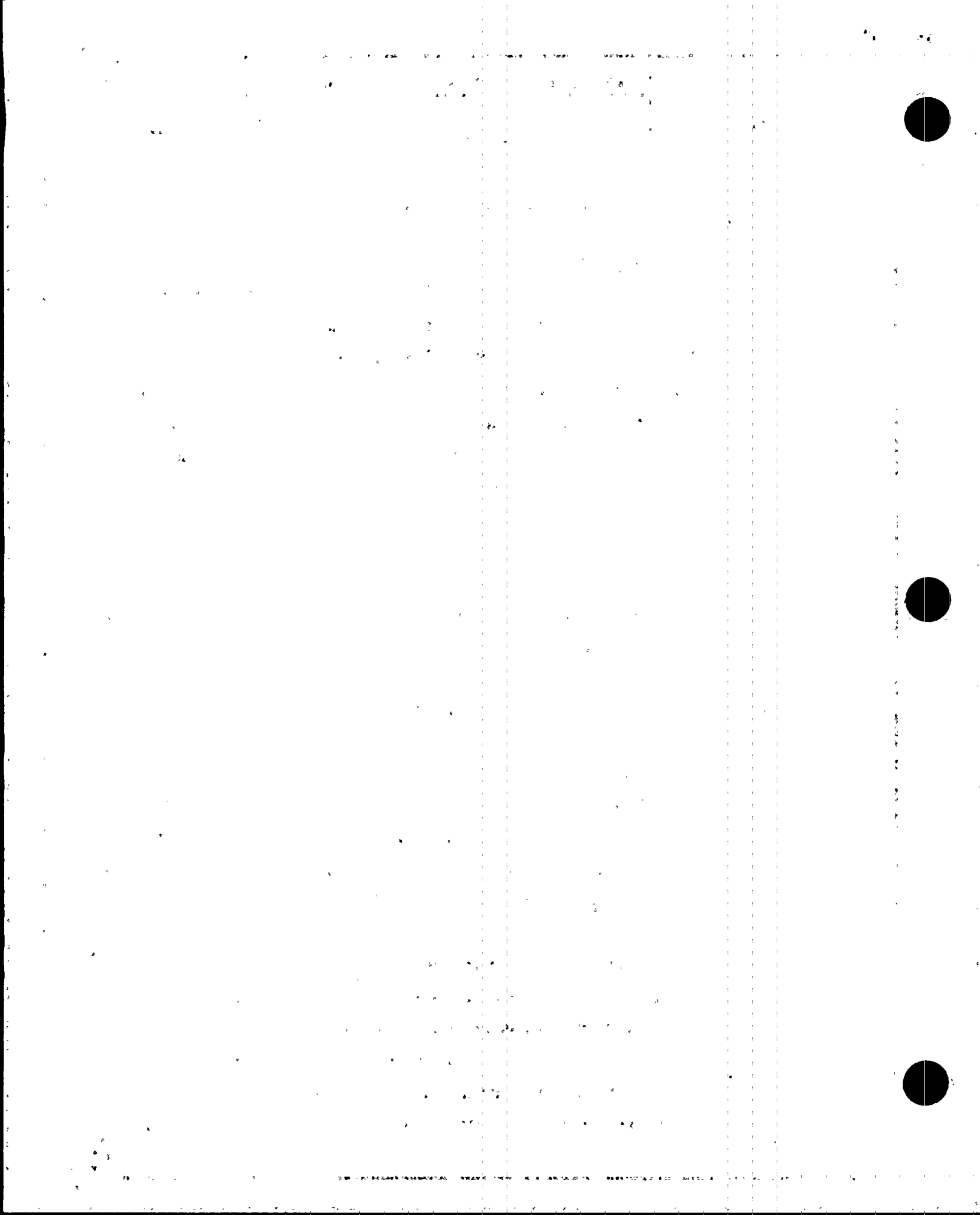
The Manager Component Support and Inspections is responsible for providing support to the plants as follows:

- o providing technical support of activities associated with component reliability, materials evaluations, inspections, corrosion protection, non-destructive examination, and ASME Section XI implementation/problem resolution for nuclear plant components;
- o providing specific component expertise, metallurgical support, and non-destructive examination and inspections;
- o establishing the FPL Welding Program to meet the requirements of the Quality Assurance Program and applicable codes and standards;
- o developing, maintaining, and controlling the procedures and instructions to implement the FPL Welding Program; and
- o originating and qualifying welding procedure specifications; and

d. **Reliability and Risk Assessment**

The Supervisor of Reliability and Risk Assessment is responsible for providing support to the plants as follows:

- o prepare and maintain Probabilistic Safety Assessment (PSA) for each plant;
- o perform Risk Assessments in support of Maintenance activities;
- o perform Risk Assessments in support of the NRC Maintenance Rule.



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1.3.1.4 Nuclear Assurance

The Director Nuclear Assurance is responsible for the selection, technical direction, administrative control (e.g. performance appraisal, salary review, hire/fire, position assignment) staffing, training and development of personnel required for supervisory and operating continuity of the Quality Assurance Department, Nuclear Safety Speakout, and the CNRB Subcommittee. The Director Nuclear Assurance serves as the CNRB Chairman. The Director Nuclear Assurance also initiates QA Program policy changes when necessary. In addition, the Director Nuclear Assurance is responsible for selecting a team independent of the Quality Assurance Department to perform periodic audits of the Quality Assurance Department. The results of these audits are presented to the Director Nuclear Assurance and the Company Nuclear Review Board (CNRB).

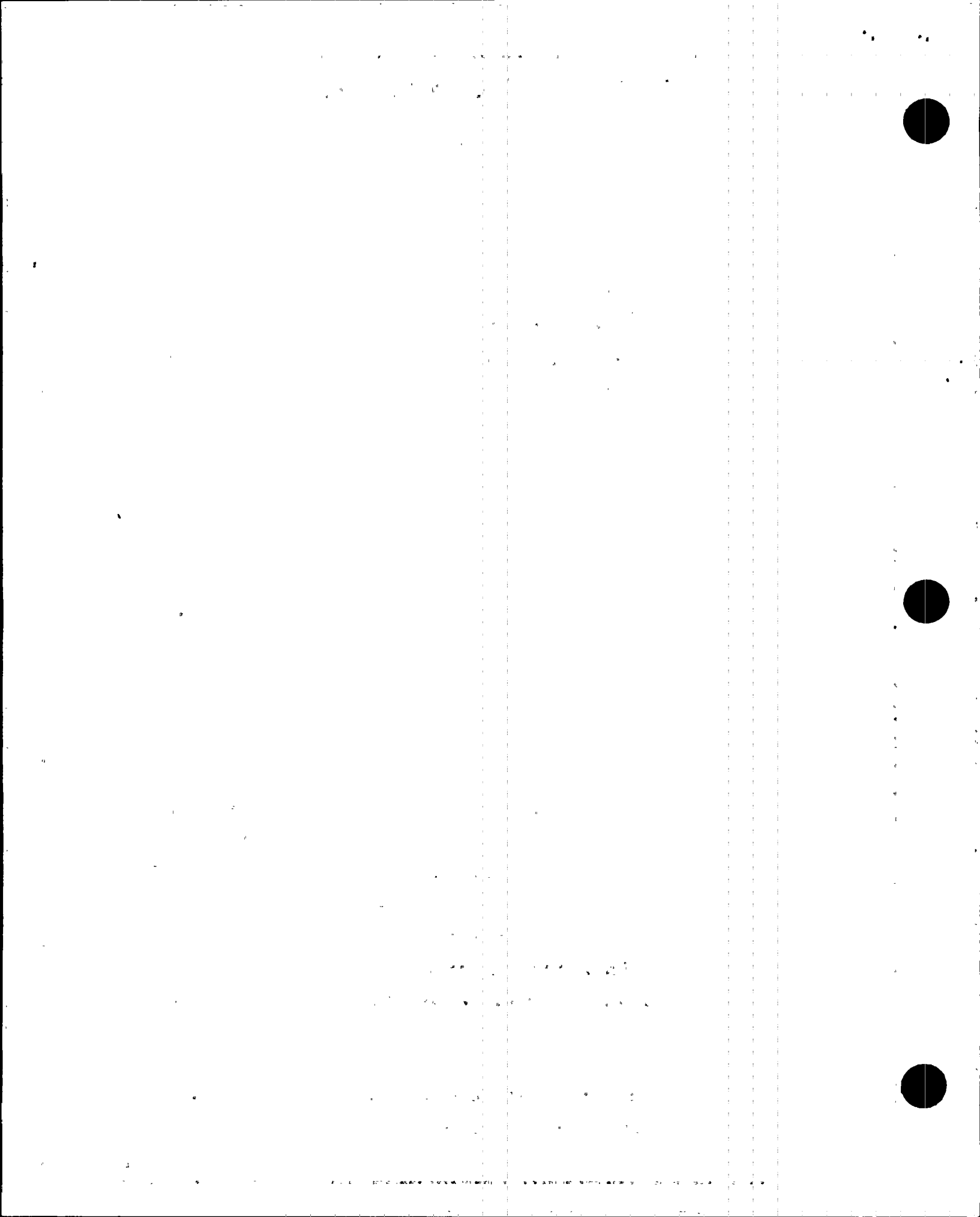
The Nuclear Assurance organization is shown in Appendix A.

a. Nuclear Safety Speakout

The Nuclear Safety Speakout Program provides a forum for employees and contractors to communicate their concerns to FPL. Concerns are documented, investigated and corrective actions are taken when necessary. The program offers confidentiality.

b. Quality Assurance Department

The Quality Assurance Department is responsible for administering the FPL Quality Assurance Program. This includes developing and verifying implementation of corporate policies, plans, requirements, and procedures affecting quality. The Quality Assurance Department retains responsibility for delegated portions of the Quality Assurance Program



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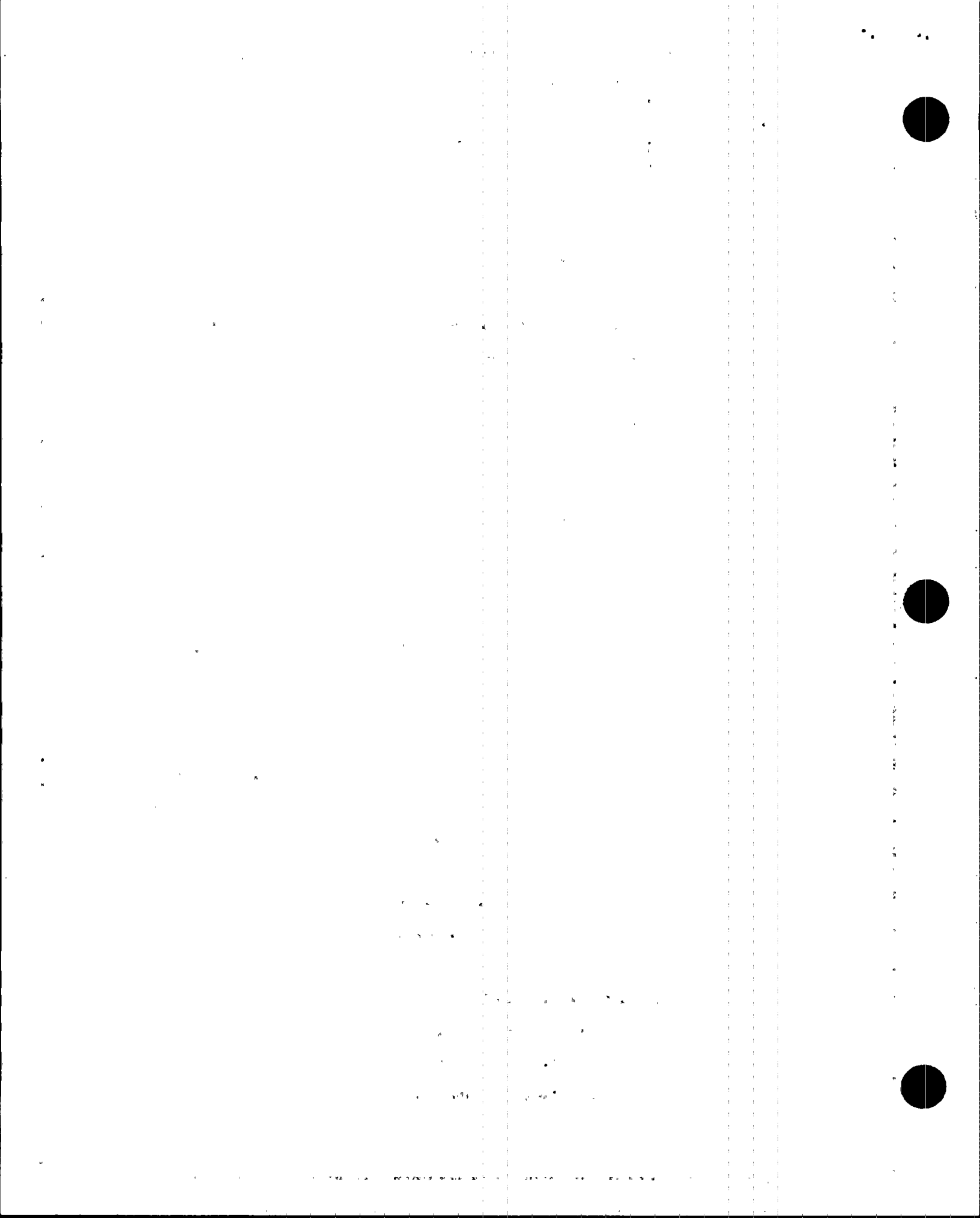
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by performing initial evaluation and subsequent periodic audits of the contractors' Quality Assurance Programs. The Quality Assurance Program responsibility further extends to the performance of audits within the Company to assure management that the established requirements and procedures are being implemented, and that the Program complies with the baseline document requirements.

The organizational freedom of the Quality Assurance function is accomplished through the corporate structure, illustrated in Appendix A, which provides independence from those departments responsible for design, procurement, engineering, construction and operation. With quality assurance as its sole function the Quality Assurance Department, both on-site and off-site, is completely free from the cost and scheduling pressures of design, procurement, construction and operation. The Quality Assurance Department has the freedom and authority to: a) identify quality problems; b) initiate, recommend or provide corrective action; c) verify implementation of the corrective action; and d) recommend the stoppage of work or operations adverse to quality, when necessary. The QA Supervisor Performance Assessment, QA Supervisor Procurement Quality, Site Quality Manager - St. Lucie, and Site Quality Manager - Turkey Point report administratively and functionally to the Director Nuclear Assurance. These reporting relationships assure that the Quality Assurance Department has direct access to the levels of management necessary to assure effective implementation of the Quality Assurance Program.

The duties, responsibilities, and authorities of each Quality Assurance group are described in the sections which follow.



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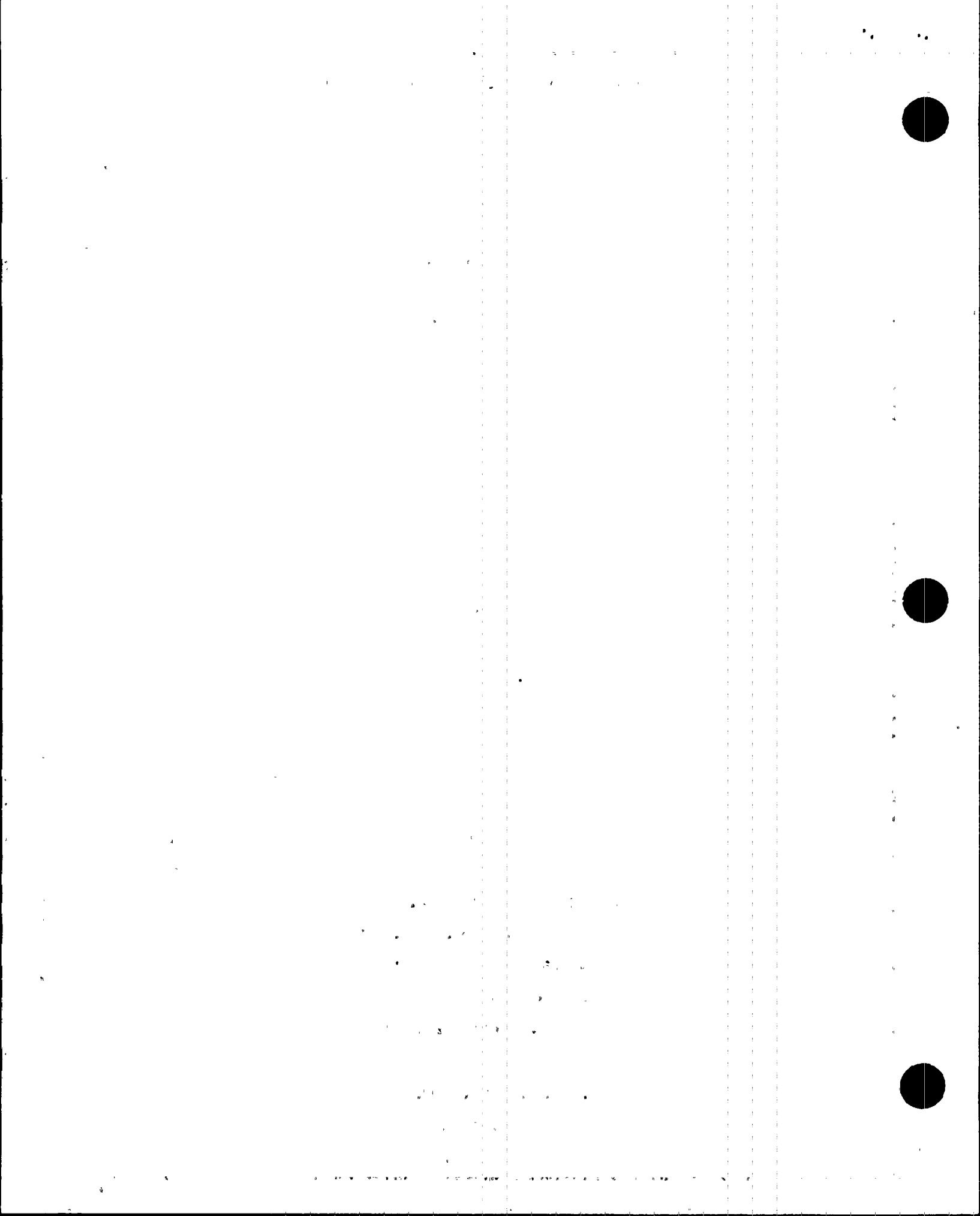
1) Performance Assessment

The QA Supervisor Performance Assessment directs and administers the Corporate Quality Assurance Program assuring compliance with the baseline documents listed in Appendix C of this Topical Quality Assurance Report. Quality Performance Assessment activities include the following:

- o develop and maintain the corporate Quality Assurance Manual, including the administration of the Quality Assurance Program Review Committee (QAPRC);
- o develop and implement a Quality Assurance indoctrination program for FPL personnel;
- o prepare reports on Quality Assurance Program activities for review by the CNRB;
- o plan, coordinate and implement a comprehensive system of periodic internal audits with support from the other Quality Assurance groups, when necessary;
- o perform periodic activity audits of FPL procurement and associated documents and changes to these documents to assure that the necessary quality requirements are imposed;
- o provide NDE Level III services including technical direction and monitoring of NDE activities performed by Quality Control at the plant sites (PTN and PSL).

2) Procurement Quality

The QA Supervisor Procurement Quality directs and administers the Procurement Quality program in support of both nuclear plants. Procurement Quality activities include the following:



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- o perform appropriate surveillance of hardware during manufacture;
- o develop and implement a program for auditing of supplier Quality Assurance/Quality Control programs including Architect Engineer/Nuclear Steam Supply System Suppliers;
- o assist other FPL departments in the identification of quality problems associated with procurement and storage; initiate, recommend, or provide solution; and verify implementation of solutions;
- o maintain the Quality Assurance Department list of approved suppliers;

For purchased items and services, the responsibility of this group extends through receipt of shipment or performance of contract.

3) Site Quality Assurance

Turkey Point Nuclear (PTN) and St. Lucie (PSL)

Quality Assurance activities at the plant sites (PTN and PSL) are accomplished by the respective site Quality Assurance groups, reporting to the Site Quality Manager. The Site Quality Manager has responsibility for on-site development and implementation of the Quality Assurance Program, including the following:

- o coordinate the development and implementation of quality assurance policies, plans, requirements, and procedures at the plant site;
- o perform audits, assessments and other observations as specified in procedures and instructions to verify compliance with Quality Assurance Program commitments;



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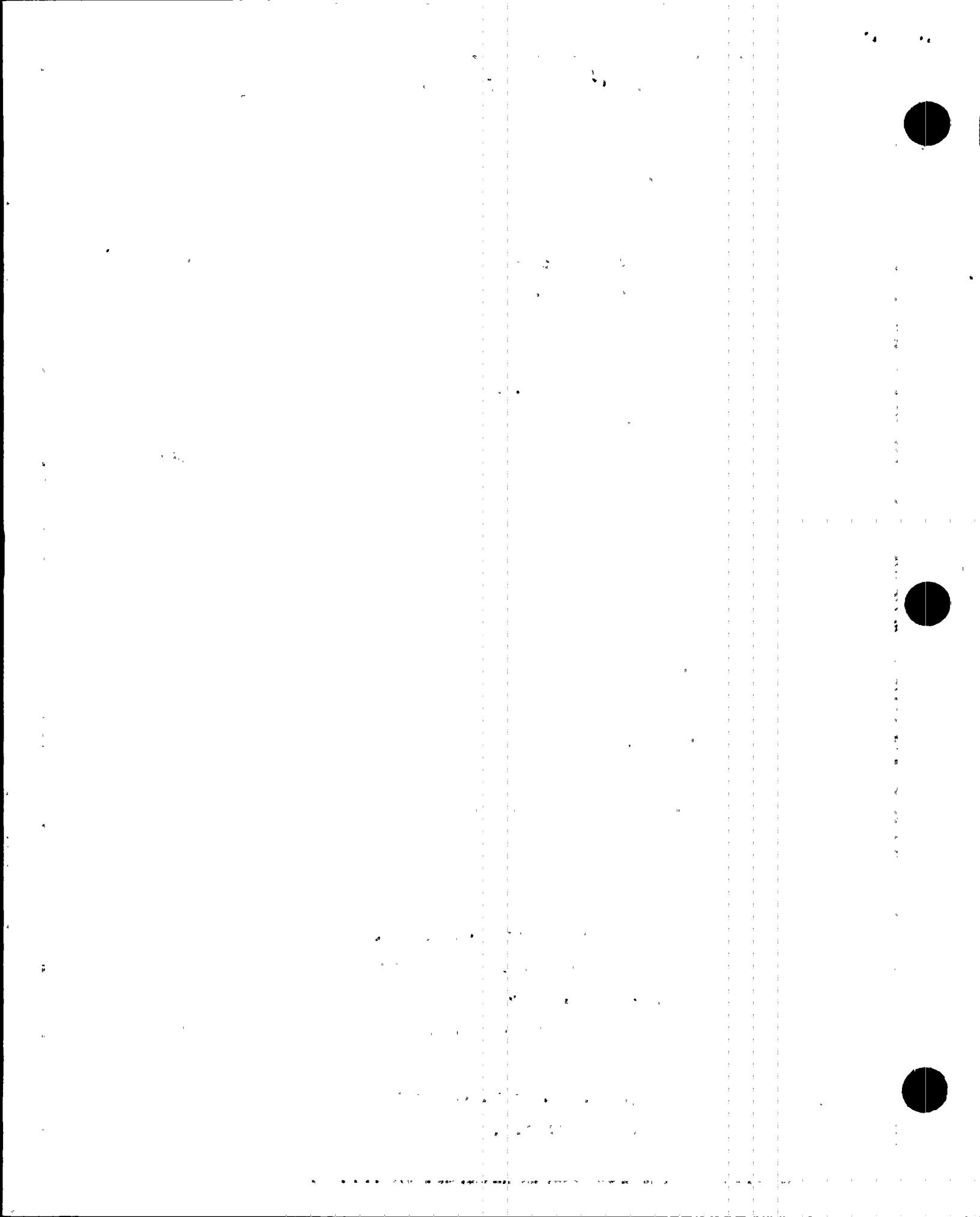
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- o perform periodic activity audits of site generated FPL procurement and associated documents and changes to these documents to assure that the necessary quality requirements are imposed;
- o recommend stoppage of work or operations adverse to quality at the plant site in accordance with the appropriate instructions;
- o review and comment on Quality Instructions or equivalent quality administrative procedures prior to issue, with respect to the requirements of the FPL Quality Assurance Program, the applicable Final Safety Analysis Report, and the applicable Technical Specifications;
- o perform audits of the architect engineer and Nuclear Steam Supply System suppliers both on-site and off-site, in conjunction with the Procurement Quality group.

The interface with the Procurement Quality group ends with the receipt of a shipment of nuclear safety-related equipment at the plant site. The Quality Assurance program for the shipment is then within the purview of the Site Quality Assurance group.

The Quality Manager - Turkey Point and Quality Manager - St. Lucie are additionally responsible for the establishment and implementation of quality control aspects of the Quality Assurance Program at the plant site. Reporting directly to the Site Quality Manager are the Quality Control Supervisors who have the authority and freedom to administer the Quality Control program and, when necessary, to stop activities adverse to quality. The Quality Control Supervisors and



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personnel performing Quality Control inspection functions are required to be independent of groups or persons performing activities that they may be required to verify or inspect.

Quality Control responsibilities include:

- o inspection, monitoring, surveillance, and review of plant activities to verify compliance with the provision of the facility operating license and the Quality Assurance Manual;
- o acceptance of the installed items;

1.3.1.5 Nuclear Business Services

The Director Business Services is responsible for Nuclear Division business and financial planning and analysis and nuclear plant support in the areas of document control and QA records management, division-based and staff computer systems, security, emergency preparedness, and radiological services.

Nuclear Business Services is shown in Appendix A.

*Accountabilities related to division-based and staff computer systems encompass:

- o directing the identification, design, development, implementation, on-going maintenance, and control of division-based information management systems;
- o identifying applicable division-based software in a Computer Software Index (CSI);
- o Coordinating and directing computer hardware and telecommunication planning and control;



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- o ensuring that the information management programs are in compliance with FPL software QA commitments.

1.3.2 Support Departments

Providing support activities for the Nuclear Division are Corporate Records, Environmental Affairs, Protection & Control Systems, and Information Management. The reporting relationship of each department is described in the following sections and is shown in Appendix A.

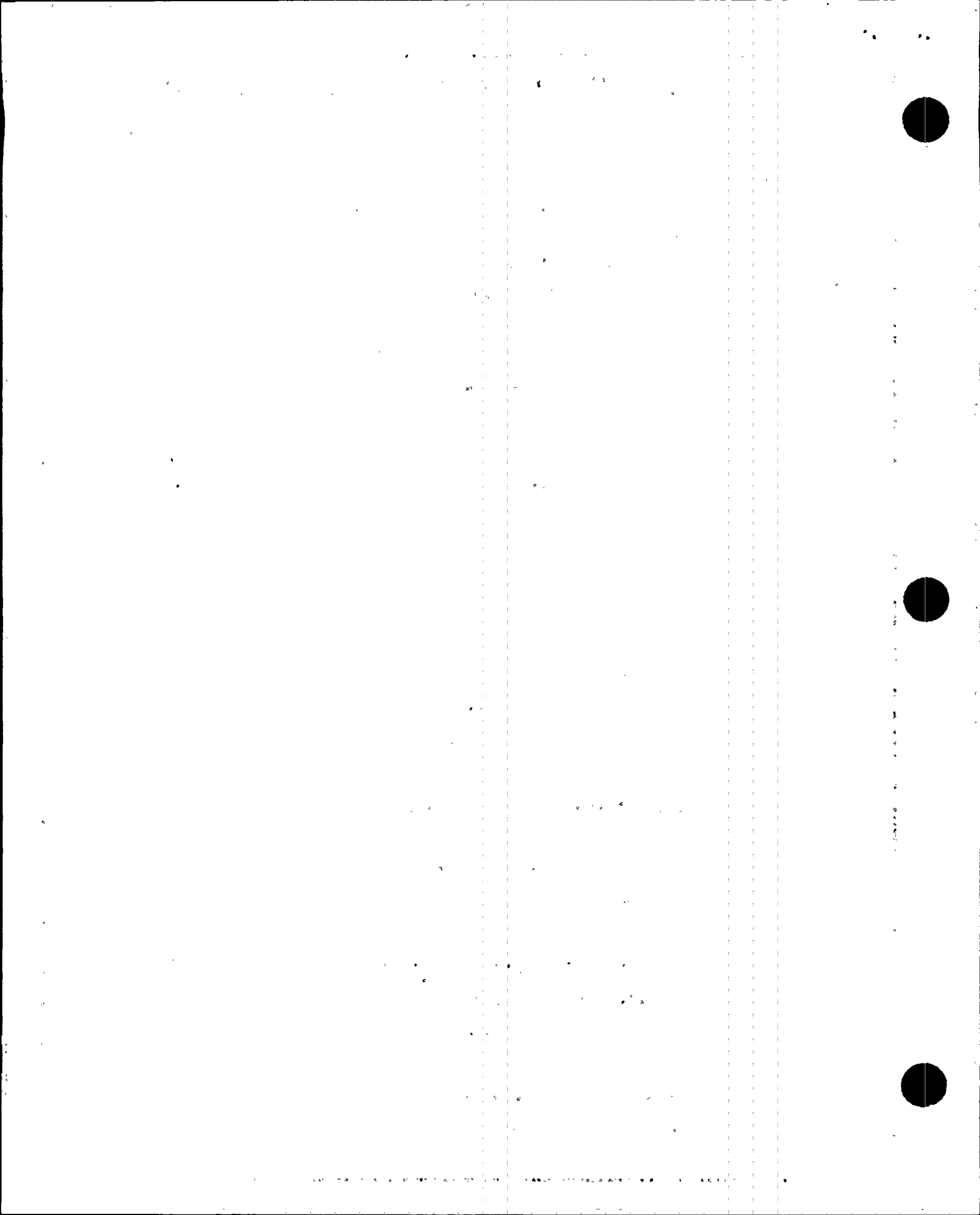
1.3.2.1 Corporate Records

The Supervisor Corporate Records is responsible for:

- o storage, retrieval and control of Quality Assurance records received from other departments;
- o assisting with the development and implementation of records and micrographics programs;
- o maintaining a QARSET approved storage facility;
- o serving as the Records Official.

1.3.2.1.a The Records Official, reporting to the General Counsel and Secretary is responsible for:

- o ensuring the Quality Assurance records program activities are managed in accordance with applicable recordkeeping requirements;
- o locating acceptable record storage areas when requested;
- o leading the evaluation of specially designated QARSET approved storage facilities, maintaining records of this evaluation, and establishing schedules to assure that re-evaluations are performed every two (2) years.



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1.3.2.2 Environmental Services

Environmental Services is responsible for obtaining the federal and state environmental permits required for FPL facilities and operations. Environmental Services is also responsible for providing technical support on environmental regulatory requirements, including regulatory development, enforcement actions, compliance with environmental requirements and environmental assessments and clean-ups at all company facilities, as well as technical support and/or advice on non-radiological environmental monitoring (federal and state) programs at the nuclear power plant sites.

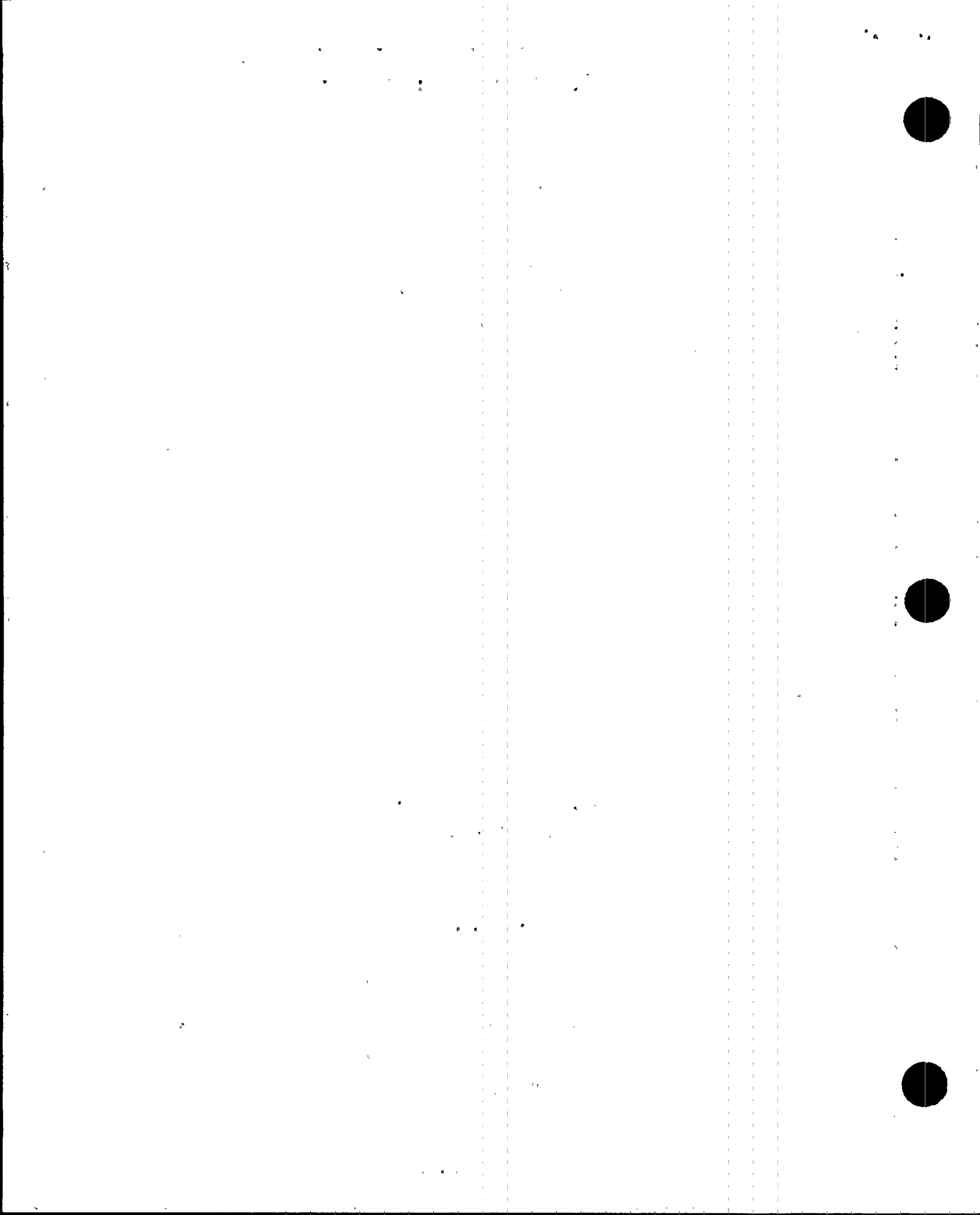
The Site Vice President has overall responsibility for implementation of the Environmental Protection Plans (EPPs) at nuclear power plant sites.

The Environmental Services Department through its functional areas is responsible for providing technical support and/or advice on non-radiological environmental monitoring programs and oversight of other requirements related to the Environmental Protection Plans. The Department provides review of proposed changes to the Environmental Protection Plans, review of plant changes, tests or experiments and review of other plant activities which may be subject to environmental regulations to ensure their compliance.

The Department provides information as necessary to the CNRB Chairman on environmental matters for which requirements are included in Environmental Protection Plans.

1.3.2.3 Protection & Control Systems

The Director of Protection & Control Systems reports to the Vice President of Power Delivery.



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Protection & Control Systems is responsible for:

- o test, calibration and maintenance of certain high voltage electrical protective relays for safety-related systems of the nuclear plant;
- o final wiring connection checks;
- o preoperational check-out and test of system protection devices;
- o providing inspection of equipment under their cognizance;
- o providing certain setpoint and checkpoint values for protective devices.

1.3.2.4 Information Management

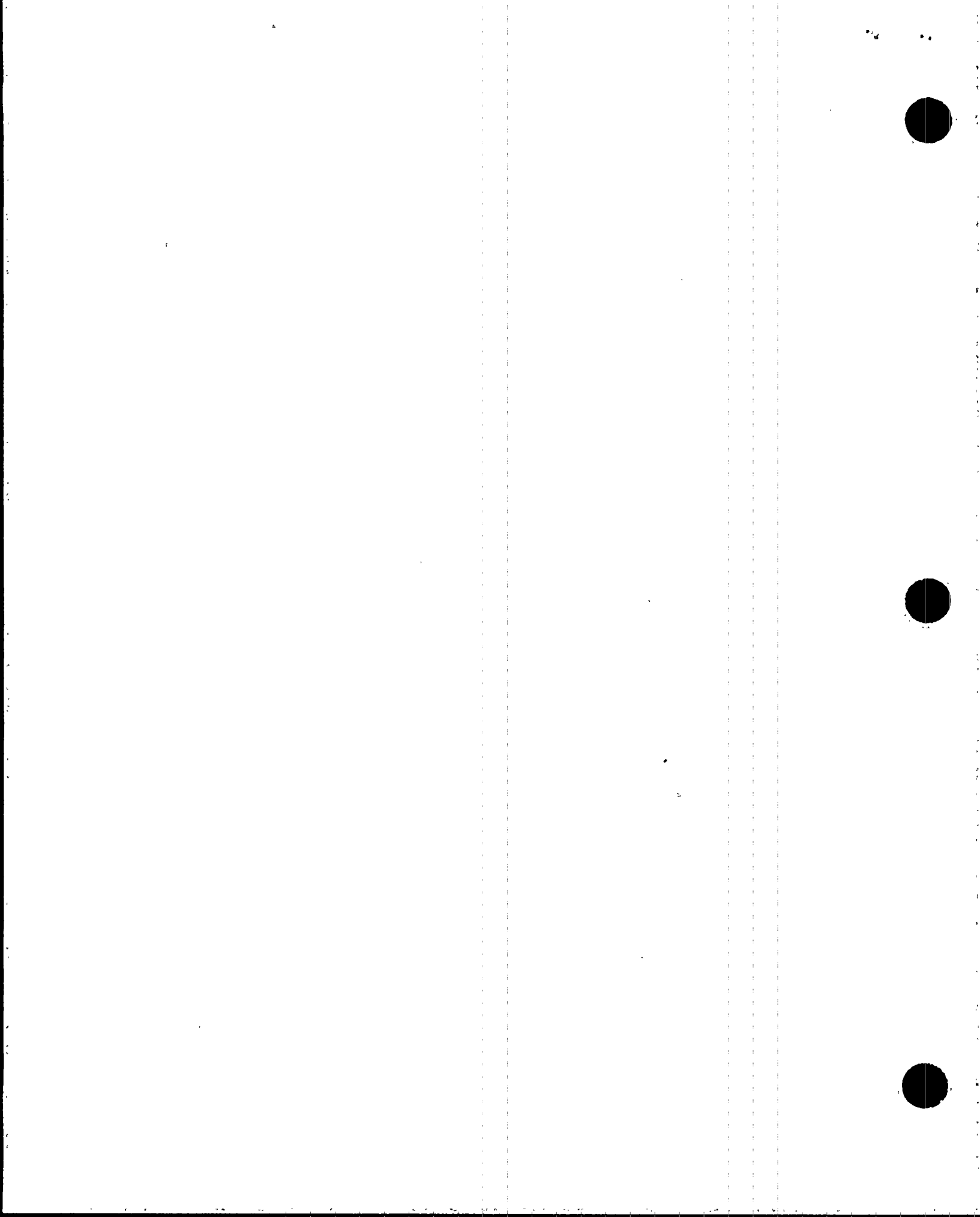
The Corporate Information Management organization is shown in Appendix A.

Information Management is responsible for ensuring the integrity of the operating environment and the applications used by the Nuclear Division. The Director of IT Operations and the Director of Business Systems report to the Vice President of Information Management.

1.3.2.4.a The Director of IT Operations is responsible for:

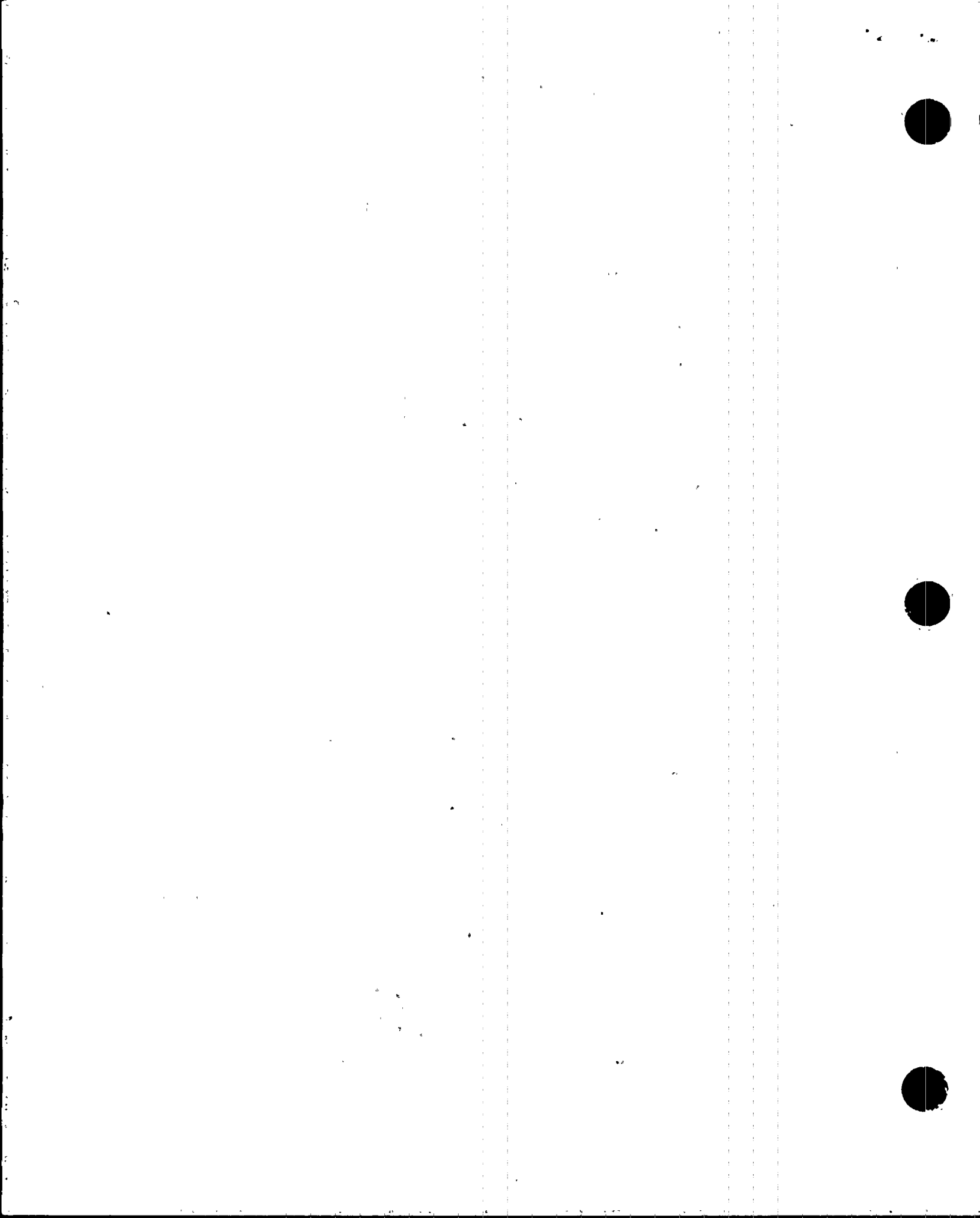
- o the installation and maintenance of operating system software and the operation of computer hardware for FPL's corporate computer system;
- o executing software production release and change control activities.

1.3.2.4.b The Director of Business Systems is responsible for administering physical databases and providing on-going technical support.



ATTACHMENT C

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1.1 GENERAL REQUIREMENTS

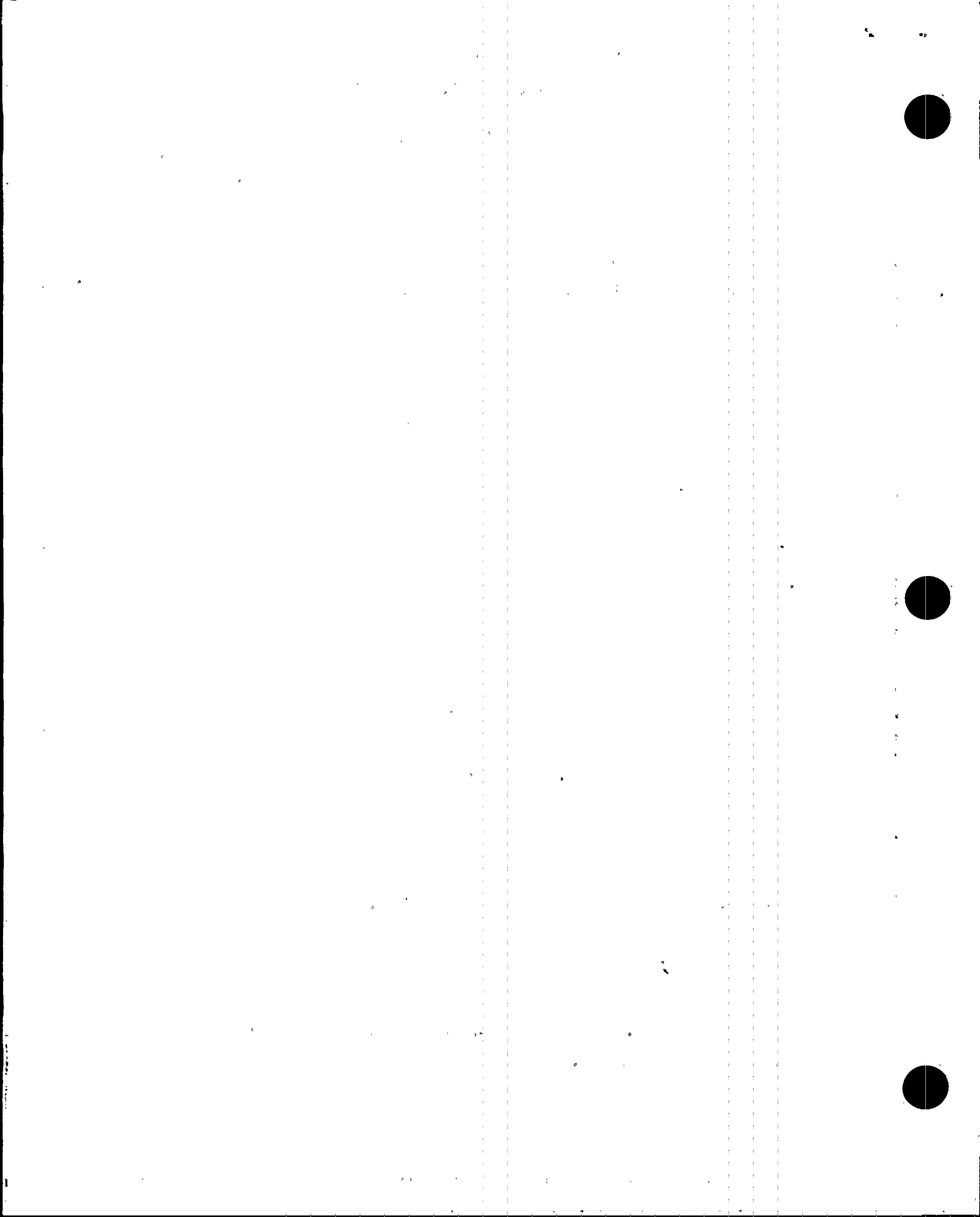
The Florida Power & Light (FPL) organizational structure shall be defined such that the responsibilities for establishment and implementation of the Quality Assurance Program are clearly identified. The authority and duties of individuals and organizations performing quality assurance and quality control functions shall be described, and shall illustrate the organizational independence and authority necessary to identify problems; to initiate, recommend, or provide solutions; and to verify implementation of solutions. In addition, the description shall illustrate that persons or groups responsible for verifying the correct performance of an activity are independent of the person or groups responsible for performing the activity.

1.2 IMPLEMENTATION RESPONSIBILITY

The FPL Chairman of the Board and Chief Executive Officer is ultimately responsible for the execution of the Quality Assurance Program for FPL nuclear power plants. The authority for developing and verifying execution of the program is delegated to the President Nuclear Division and the Director Nuclear Assurance. ~~The reporting relationship of each department involved with the Quality Assurance Program is shown in Appendix A.~~

~~To provide for a review and evaluation of Quality Assurance Program policies and activities, the President Nuclear Division has established the Company Nuclear Review Board (CNRB). This organization's responsibilities are defined in Section 1.3.1.~~

The President Nuclear Division has overall responsibility for the Nuclear Division's activities including corporate responsibility for overall plant nuclear safety.



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The Vice President - St. Lucie Plant and Vice President - Turkey Point Plant are accountable for the operation, maintenance, and modification of their respective nuclear plant. The plant Vice Presidents have overall responsibility for implementation of the Environmental Protection Plans at their respective sites.

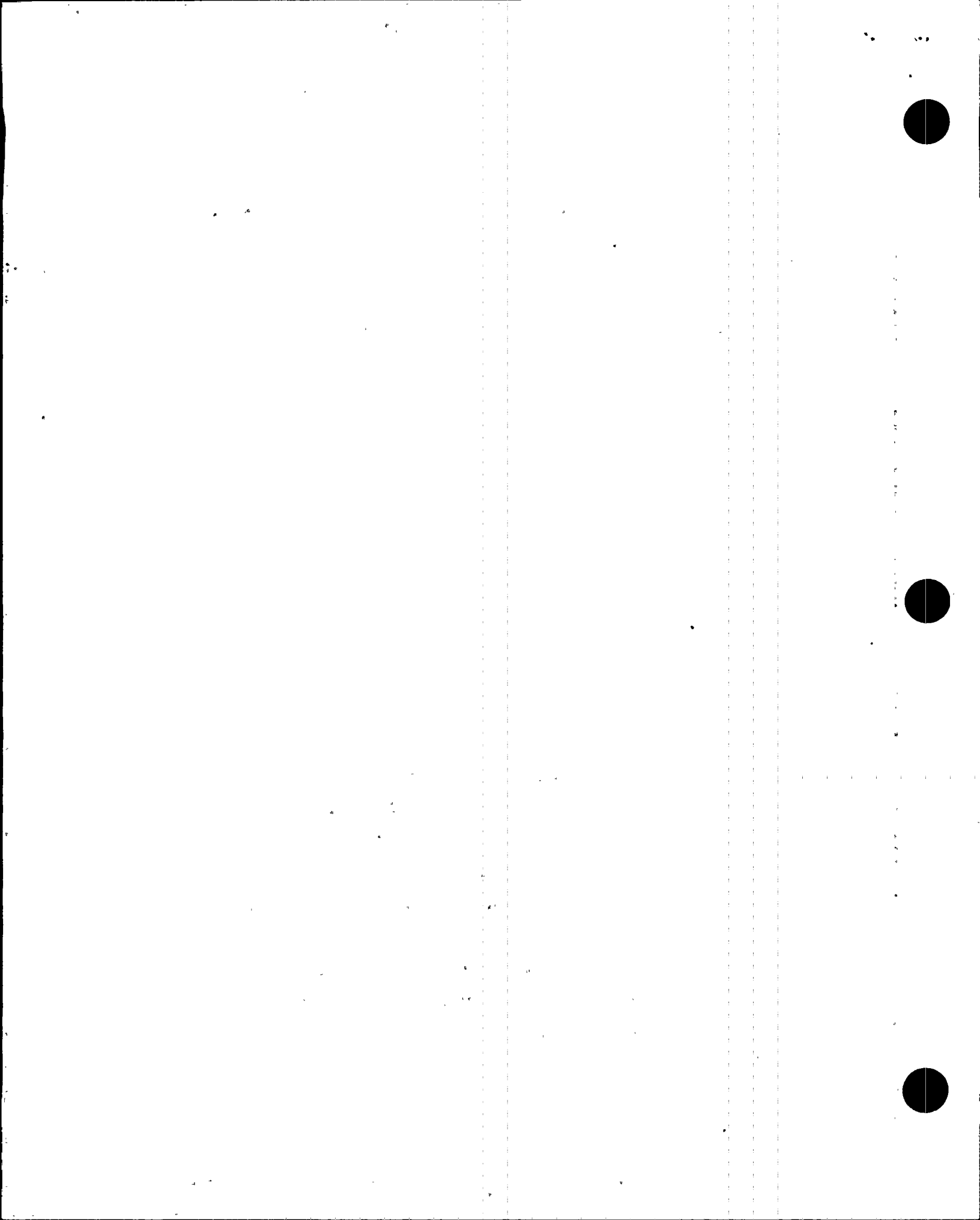
The Plant General Manager - PSL and Plant General Manager - PTN, through the respective plant Vice President, are responsible for the safe operation of the nuclear plant.

The Director Nuclear Assurance is responsible for verifying execution of the FPL Quality Assurance Program and initiating Quality Assurance policy and program changes when necessary. The Director Nuclear Assurance is also responsible for the Nuclear Safety Speakout program (employee concerns program) and administration of the Company Nuclear Review Board (CNRB) Subcommittee. The Director Nuclear Assurance serves as the CNRB chairman.

The Vice President Nuclear Engineering is responsible for nuclear plant design and engineering support.

The Manager Nuclear Licensing and Special Programs is responsible for selected licensing support activities and other assigned programs at the Juno Beach Office.

The Director Nuclear Business Services is responsible for Nuclear Division business and financial planning and analysis and nuclear plant support in the areas of document control and QA records management, division-based and staff computer systems, security, emergency preparedness, and radiological services.



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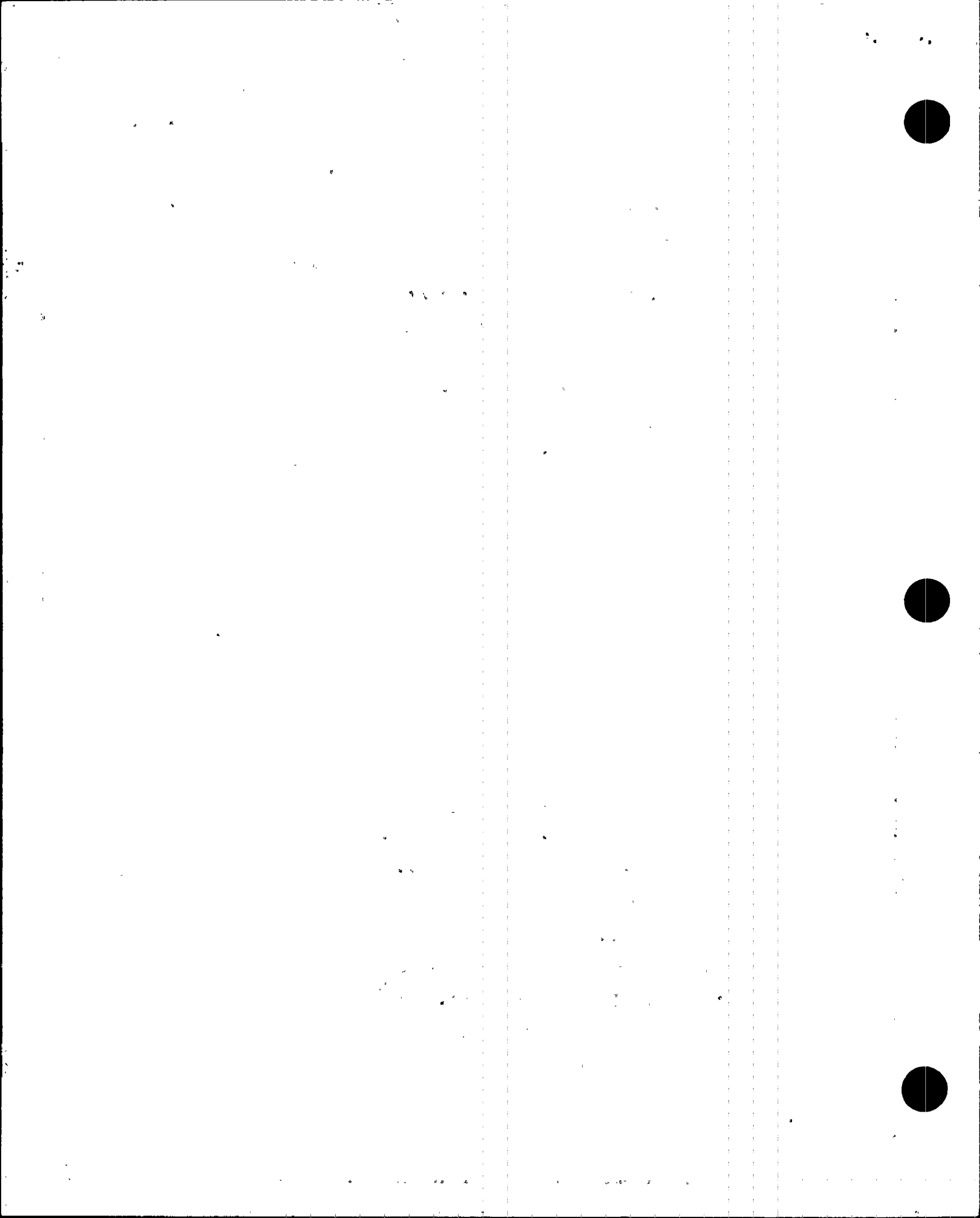
The Director of Protection & Control Systems is responsible for test, calibration and maintenance of certain high voltage electrical protective relays for safety related systems of the nuclear plant and for related support functions.

The Director Environmental Services is responsible for providing technical support on environmental regulatory matters.

The Vice President of Information Management is responsible for ensuring the integrity of the computer operating environment and the applications used by the Nuclear Division.

The Corporate Records Supervisor is responsible for storage, retrieval and control of Quality Assurance records received from the nuclear plants and corporate office. The Corporate Records Supervisor also serves as the Records Official and chairman of the Quality Assurance Records Storage Evaluation Team (QARSET).

The head of each department or organization performing activities affecting quality is responsible for: a) identifying those activities within the organization which affect quality as defined by the Quality Assurance Program; b) establishing and clearly defining the duties and responsibilities of personnel within ~~his~~ their organization who execute those activities affecting quality; and c) planning, selecting, and training personnel to meet the requirements of the Quality Assurance Program. The responsibility, authority, and organizational relationship for performing activities affecting quality within each organization shall be established and delineated in procedures, organizational charts and written job or functional descriptions.



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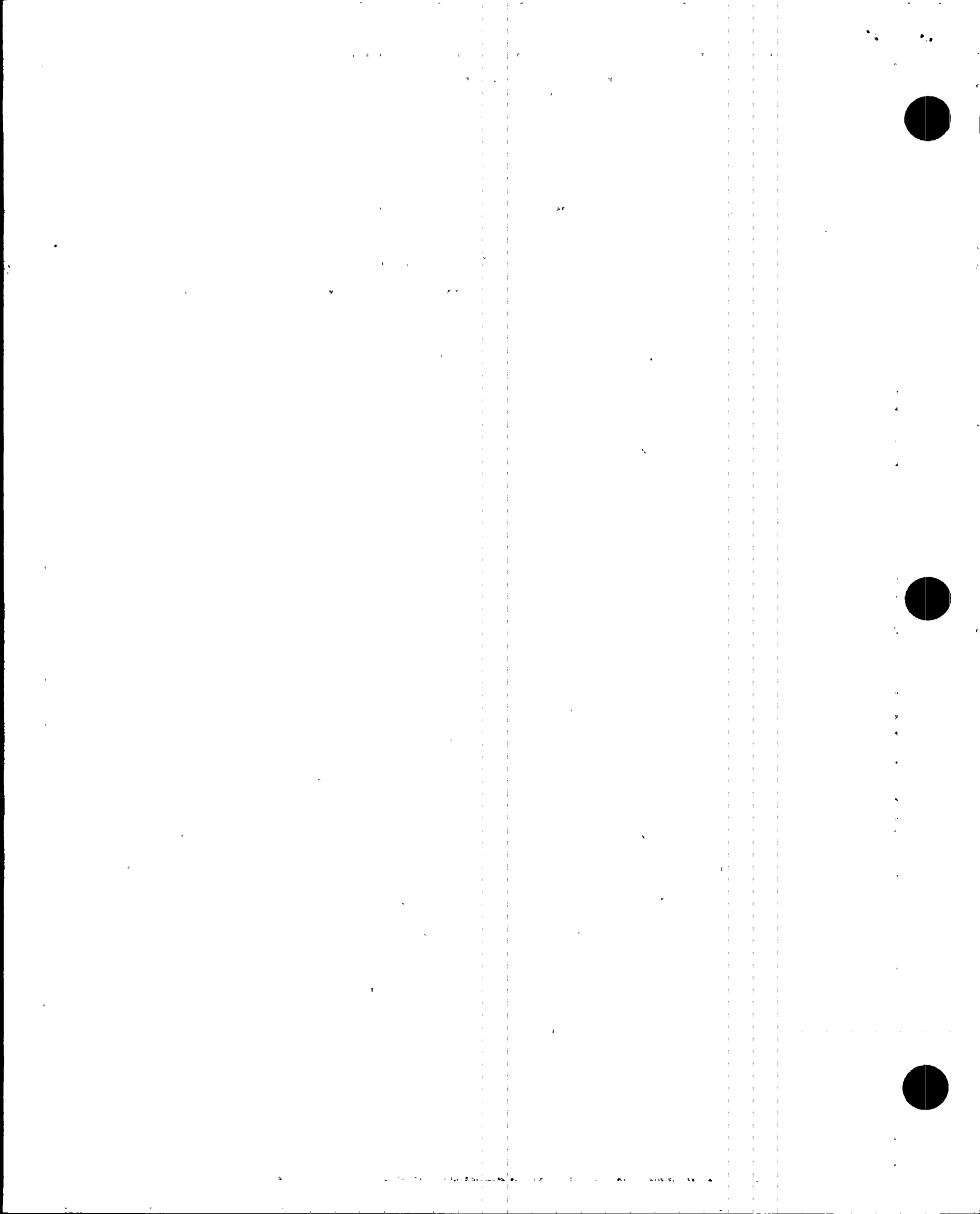
Activities affecting quality may be performed by FPL or be contracted. Should any of these functions be contracted, the contractor may perform the activities under his their own Quality Assurance Program, which must have prior approval by FPL Quality Assurance, or the contractor may directly adopt the requirements of the FPL Quality Assurance Manual. If the contractor implements the Quality Control function directly to the FPL Quality Assurance Manual requirements, the contractor's Quality Control Supervisor shall have the authority and freedom to administer the Quality Control program.

1.3 ORGANIZATIONAL RELATIONSHIPS

The organizational charts in Appendix A show the lines of authority, responsibility and communication from the highest management level through intermediate levels to, and including the on-site operating organizations.

The Plant General Managers have control of the on-site resources necessary for the safe operation and maintenance regardless of organizational reporting.

The organizational freedom of the Quality Assurance function is accomplished through the corporate structure, illustrated in Appendix A, which provides independence from those departments responsible for design, procurement, engineering, construction and operation. With quality assurance as its sole function, the Quality Assurance Department, both on-site and off-site, is completely free from the cost and scheduling pressures of design, procurement, construction and operation. The Quality Assurance Department has the freedom and authority to: a) identify quality problems; b) initiate, recommend or provide corrective action; c) verify implementation of the corrective action; and d) recommend the stoppage of work or operations adverse to quality, when necessary. The QA Supervisor Performance Assessment, QA Supervisor Procurement Quality, Site



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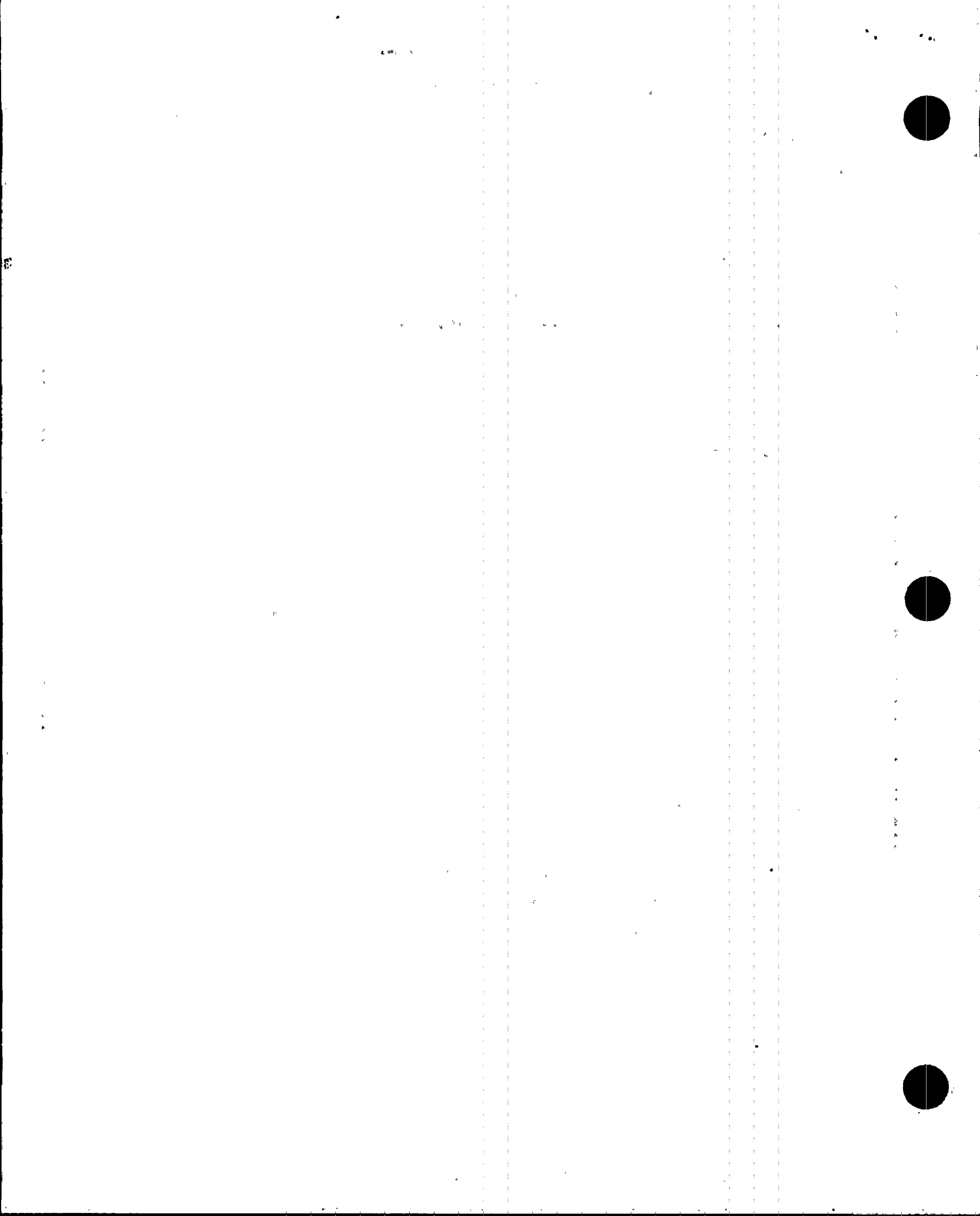
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Quality Manager - St. Lucie, and Site Quality Manager - Turkey Point report administratively and functionally to the Director Nuclear Assurance. These reporting relationships assure that the Quality Assurance Department has direct access to the levels of management necessary to assure effective implementation of the Quality Assurance Program.

1.4 REVIEW AND AUDIT COMMITTEES

The Plant Nuclear Safety Committee (PNSC) at Turkey Point Plant and the Facility Review Group (FRG) at the St. Lucie Plant are comprised of key plant management and staff personnel as described in the plant Technical Specifications. The PNSC/FRG serves the Plant General Manager in a technical advisory capacity for the review of all safety related procedures and activities that impact plant safety and the facility operating license.

The Company Nuclear Review Board (CNRB), reporting to the President Nuclear Division, is comprised of executive level members of management with responsibilities for the execution of the Quality Assurance Program. The CNRB composition is described in Section 6.0 of each facility's Technical Specifications. Subjects within the purview of the CNRB are listed in the appropriate plant Technical Specifications. The CNRB has the authority to carry out its responsibilities by way of written action letters, verbal directions, meeting minutes or appointed subcommittees. Where necessary, the CNRB may use consulting services to perform required reviews. Periodic audits of the Quality Assurance Department are performed by a team independent of the Quality Assurance Department. The results of these audits are presented to the CNRB.



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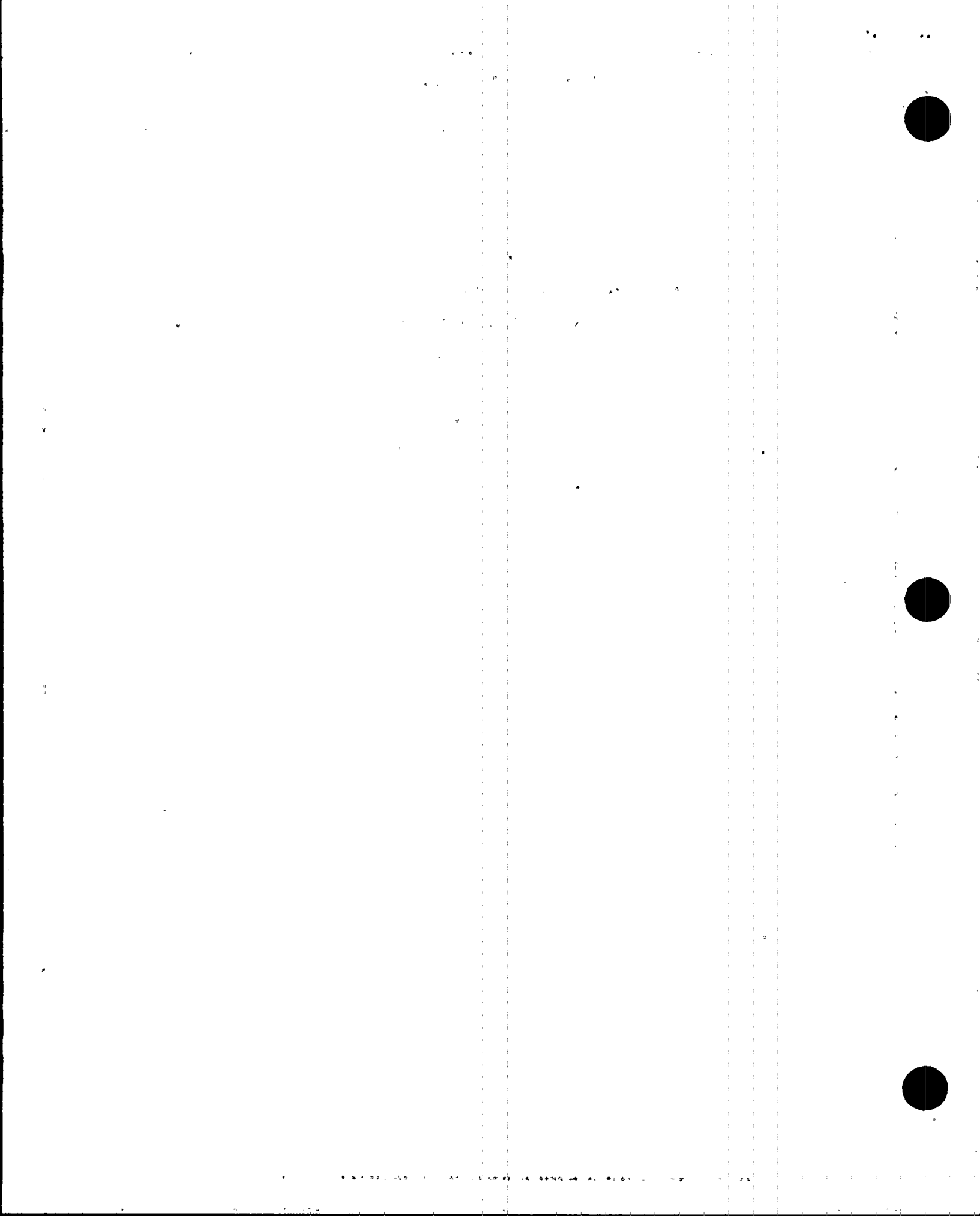
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~~In addition, a~~ A Quality Assurance Program Review Committee (QAPRC) has been established to review changes to the Quality Assurance Program and to provide an interface for quality matters in each department affecting quality. The QAPRC is an interdepartmental organization with the responsibility to review and resolve recommended changes to the Quality Assurance Program. This committee is administered by the Quality Assurance Performance Assessment group. ~~Quality Assurance Program changes reviewed by the QAPRC are reviewed and signed by the affected department heads.~~

A Quality Assurance Program Review Committee (QAPRC) Member shall be designated by the head of each department or organization. The QAPRC Member is the prime interface for coordination of quality matters within the member's department, with the Quality Assurance Department, and with other departments.

~~The head of each department or organization performing activities affecting quality is responsible for: a) identifying those activities within the organization which affect quality as defined by the Quality Assurance Program; b) establishing and clearly defining the duties and responsibilities of personnel within his organization who execute those activities affecting quality; and c) planning, selecting, and training personnel to meet the requirements of the Quality Assurance Program. The responsibility, authority, and organizational relationship for performing activities affecting quality within each organization shall be established and delineated in organizational charts and written job or functional descriptions.~~



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~~Activities affecting quality may be performed by FPL or be contracted. Should any of these functions be contracted, the contractor may perform the activities under his own Quality Assurance Program, which must have prior approval by FPL Quality Assurance, or the contractor may directly adopt the requirements of the FPL Quality Assurance Manual. If the contractor implements the Quality Control function directly to the FPL Quality Assurance Manual requirements, the contractor's Quality Control Supervisor shall have the authority and freedom to administer the Quality Control program.~~





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1.3 RESPONSIBILITIES

The organization charts in Appendix A illustrate the lines of authority and areas of responsibility for each of the organizations that are involved in activities affecting quality. Below are listed the departments and organizations that have quality assurance responsibilities. Organizational responsibilities for implementation of the Quality Assurance Program are described in the Topical Quality Requirements (TQRs).

1.3.1 Nuclear Division

1.3.2 Support Departments

1.3.1.1 Plant Vice Presidents

1.3.2.1 Corporate Records

1.3.1.2 Licensing and Special Programs

1.3.2.2 Environmental Services

1.3.1.3 Nuclear Engineering

1.3.2.3 Protection & Control Systems

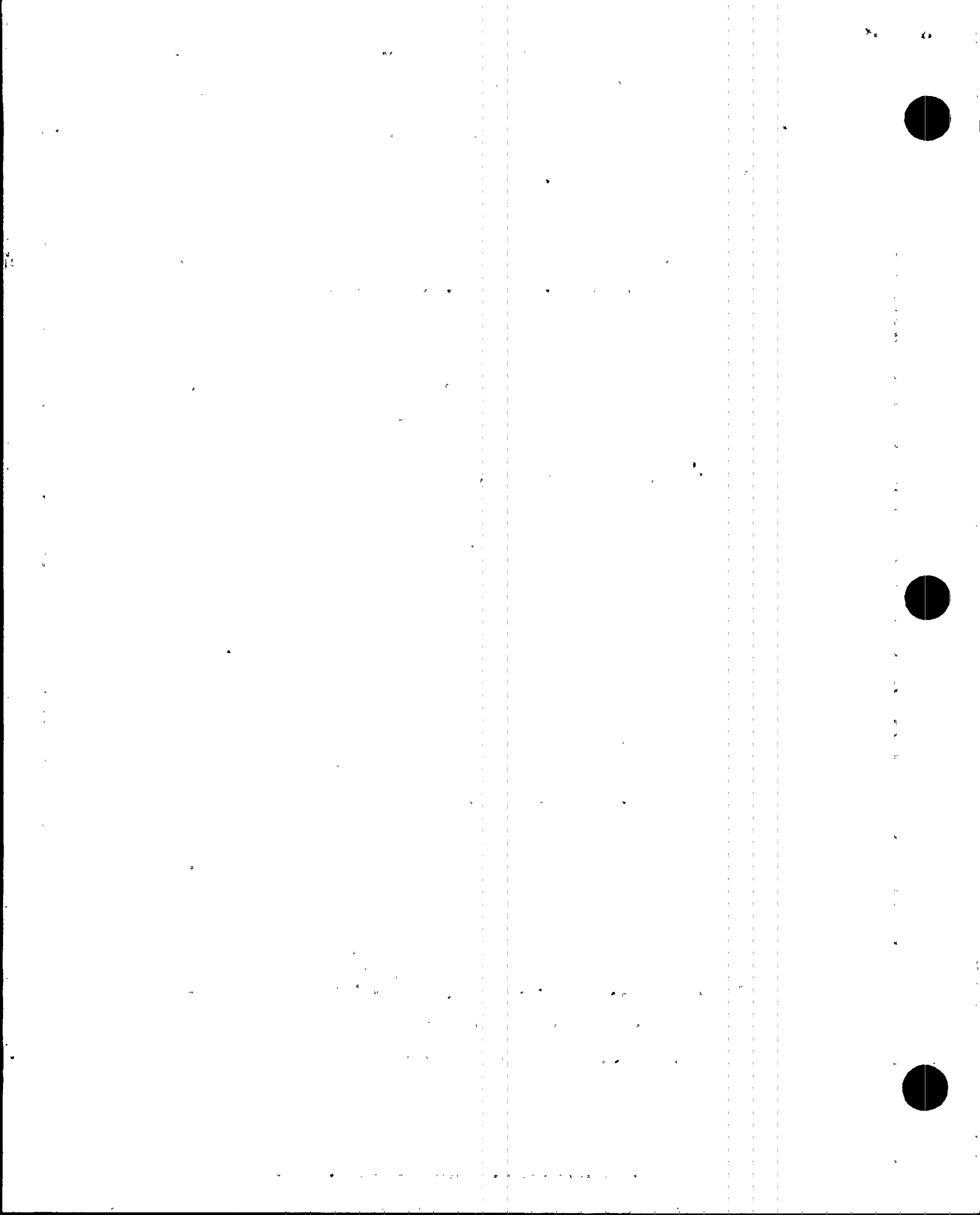
1.3.1.4 Nuclear Assurance

1.3.2.4 Information Management

1.3.1.5 Nuclear Business Services

1.3.1 Nuclear Division

Throughout plant life, the Nuclear Division maintains control of and responsibility for nuclear power plant design, preoperational and start-up testing, operation, maintenance, refueling, and modification of the plant in accordance with written and approved procedures.



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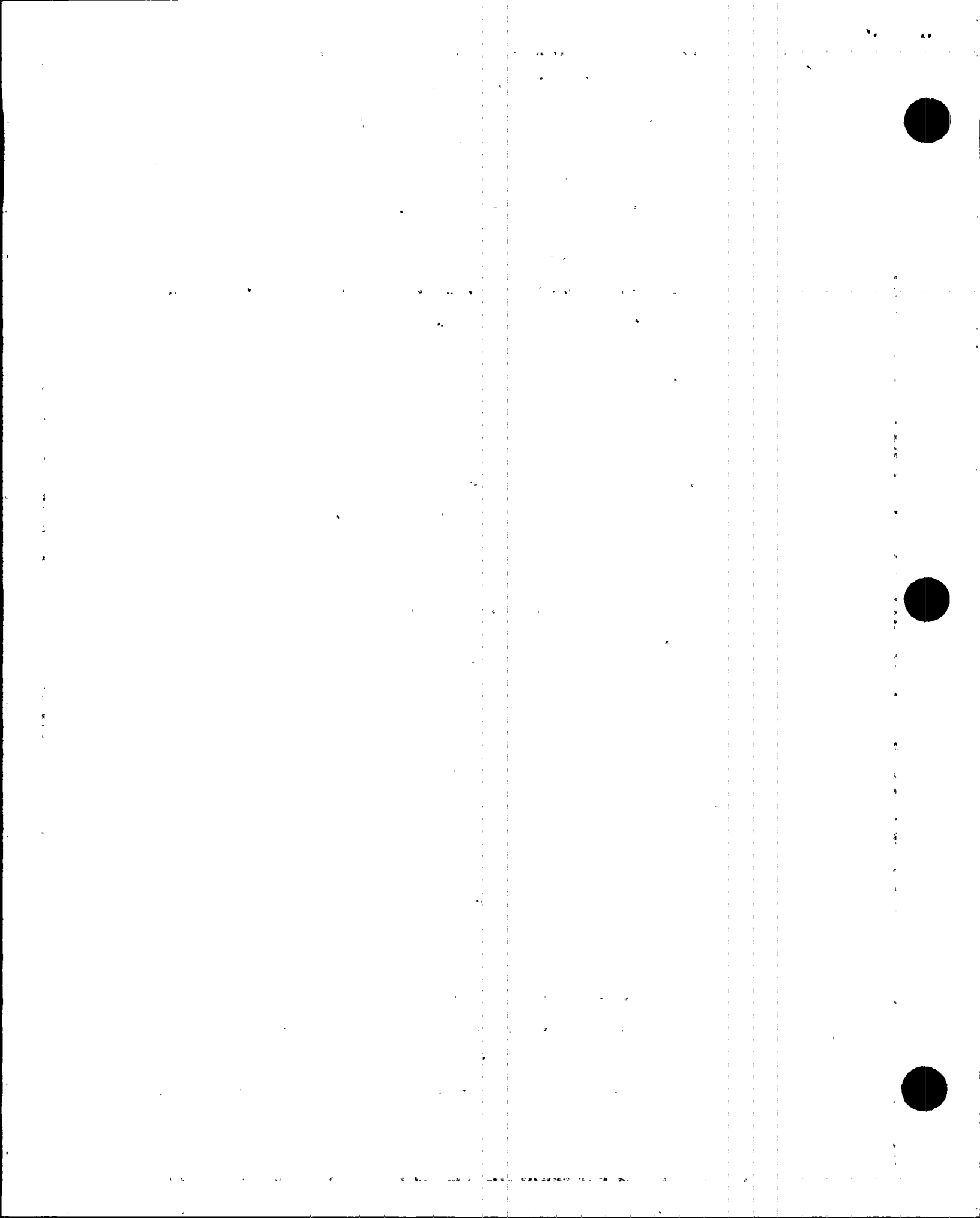
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~~The President Nuclear Division has overall responsibility for the Nuclear Division's activities including corporate responsibility for overall plant nuclear safety. Reporting to the President Nuclear Division are: the Vice President Turkey Point Plant, Vice President St. Lucie Plant, Director Nuclear Assurance, Vice President Nuclear Engineering, Manager of Licensing and Special Programs, and the Director Nuclear Business Services.~~

~~The Company Nuclear Review Board (CNRB), reporting to the President Nuclear Division, is comprised of executive level members of management with responsibilities for the execution of the Quality Assurance Program. The CNRB reviews, or directs the performance of reviews of, activities concerning the technical aspects of the operating nuclear power plant insofar as they impact plant safety, the health and safety of the public, and laws, regulations and licensing commitments. In addition, audits of these areas are performed under the cognizance of the CNRB.~~

~~The CNRB composition is described in Section 6.0 of each facility's Technical Specifications. Subjects within the purview of the CNRB are listed in the appropriate plant Technical Specifications. The CNRB has the authority to carry out its responsibilities by way of written action letters, verbal directions, meeting minutes or appointed subcommittees. Where necessary, the CNRB may use consulting services to perform required reviews.~~

~~The CNRB is responsible for reviewing and evaluating Quality Assurance Program policies and activities. Quality Assurance Program status reports shall be periodically given by the Quality Assurance Department.~~





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~~CNRB meetings shall be held by the Chairman to keep members apprised of conditions including significant problems that require management attention. Periodic audits of the Quality Assurance Department shall be performed by a team independent of the Quality Assurance Department. The results of this audit are presented to the Director Nuclear Assurance and the CNRB.~~

~~1.3.1.1 Plant Vice Presidents~~

~~The Vice President St. Lucie Plant and Vice President Turkey Point Plant are accountable for the operation, maintenance, and modification of their respective nuclear plant, as well as the selection, development and direction of the assigned staff. They will act as liaison between the plants and corporate headquarters, and are accountable for ensuring that company policies and procedures are properly implemented and continued at the nuclear site, including procurement and control of material. The Plant Vice President has overall responsibility for implementation of the Environmental Protection Plans at their respective sites.~~

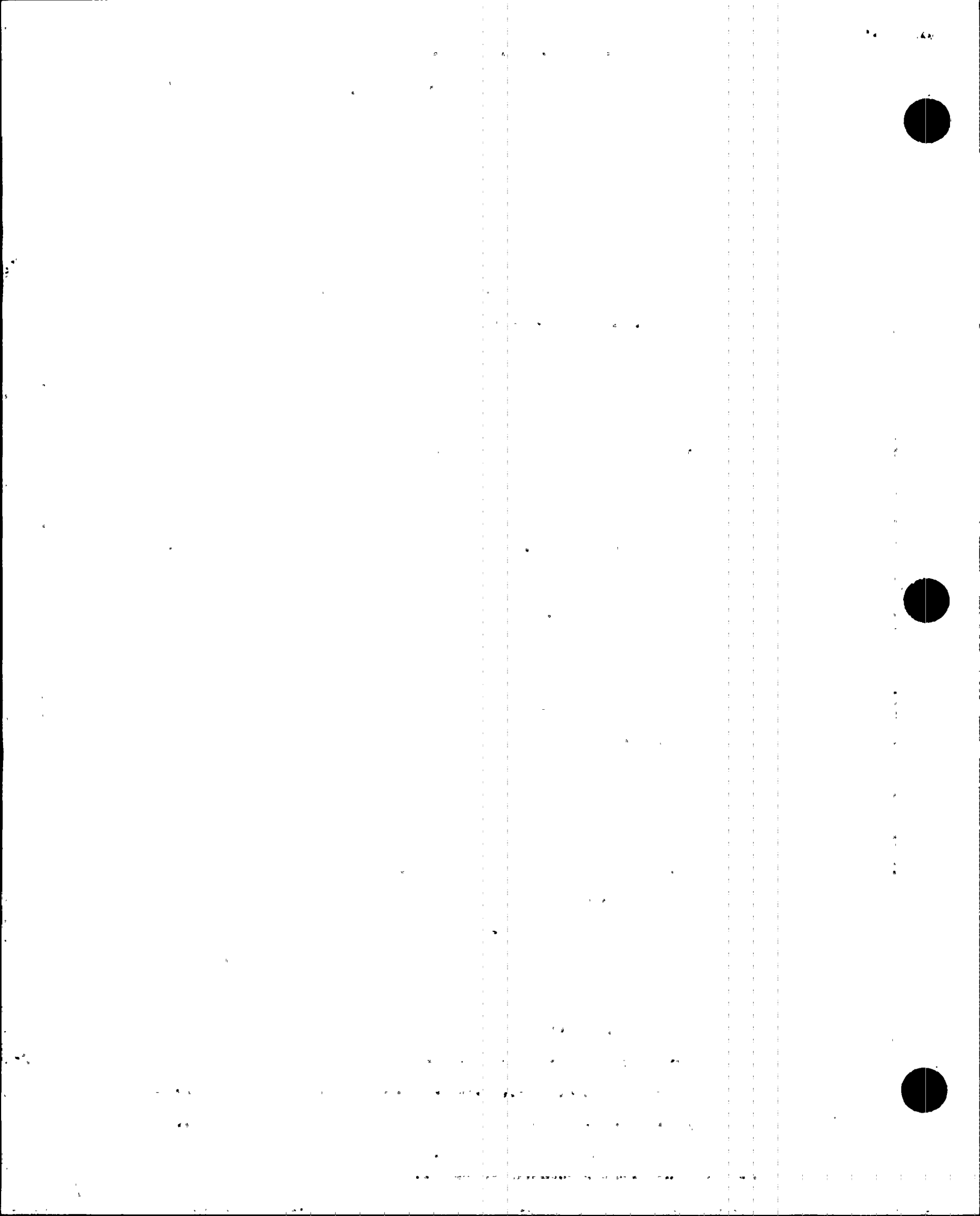
~~Other responsibilities of the site Vice President include the following:~~

~~Nuclear Services~~

- ~~o Configuration management.~~

~~Nuclear Training~~

- ~~o Preparation of policy documents regarding nuclear training;~~
- ~~o Support to secure the necessary resources to ensure that site personnel are adequately trained. They must have adequate technical and job related skills to provide safe and efficient operation while complying with NRC requirements.~~





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Nuclear Security

- ~~o Coordinate with the opposite plant site for overall development and implementation of the FPL Nuclear Security program.~~

Nuclear Business Systems

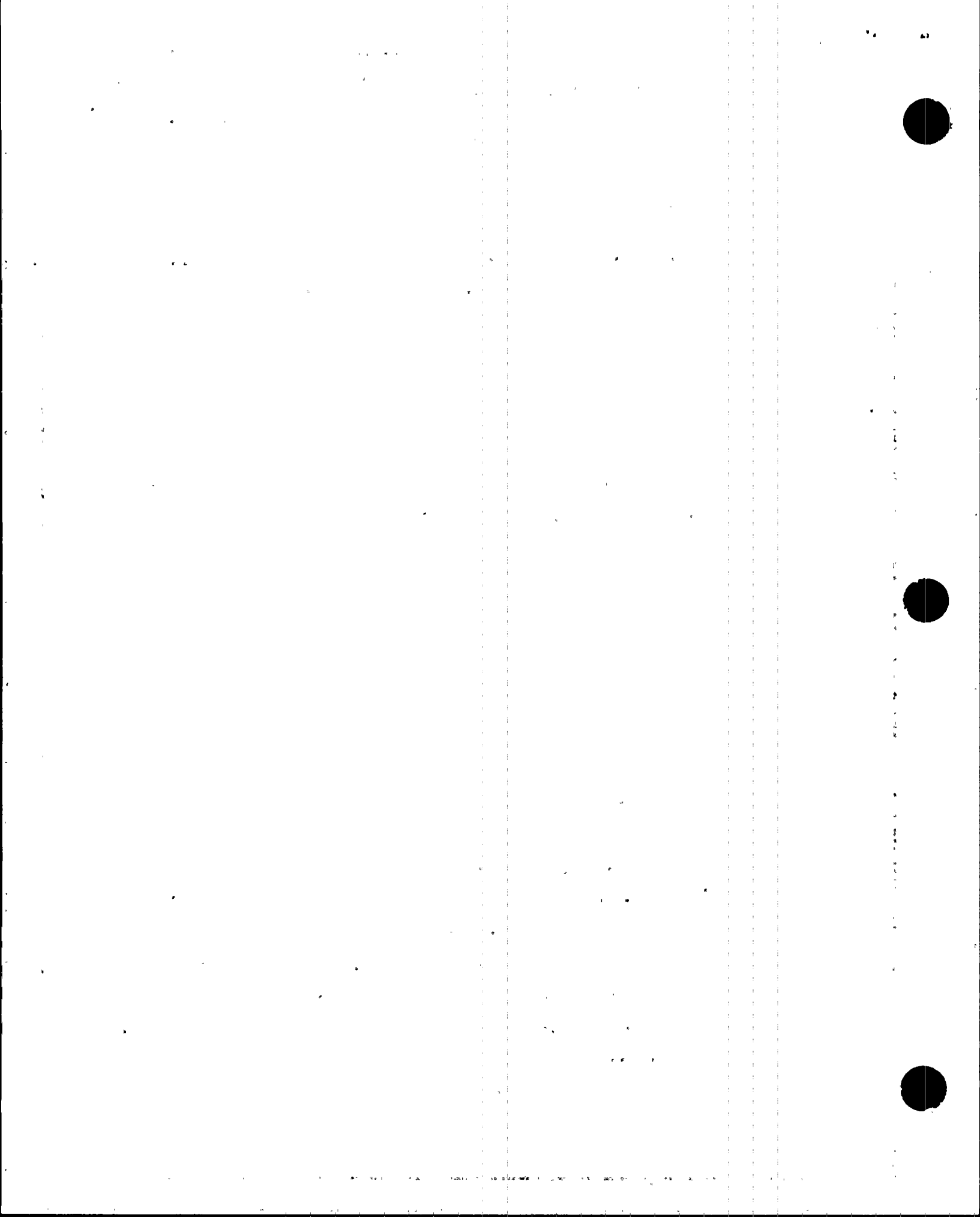
- ~~o Coordinating contract activities.~~
- ~~o Reviewing contracts to assure that technical and quality requirements developed by others are incorporated into the procurement documents which it authorizes.~~
- ~~o Ensuring that site-based information management programs are in compliance with FPL software QA commitments.~~
- ~~o Business Systems Departments at PSL and PTN are accountable for directing the identification, design, development, implementation, on going maintenance, and control of all nuclear site specific data processing information management systems (excluding process applications), and identifying applicable site specific software in a Computer Software Index (CSI).~~

Nuclear Licensing

- ~~o Maintenance of the operating license;~~
- ~~o Interface with the NRC;~~
- ~~o Resolution of NRC safety and regulatory issues;~~
- ~~o Administering the Operating Experience and Feedback System.~~

Nuclear Materials Management

- ~~o Negotiation, generation, issuance of procurement documents for required items and services supporting the operation, licensing, maintenance, notification, and inspection of FPL nuclear plants, and for materials and equipment to support Nuclear Division staff;~~





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~~o Reviewing procurement documents to assure that technical and quality requirements developed by others are incorporated into the procurement documents which it authorizes.~~

~~The organization of Turkey Point Plant and St. Lucie Plant is shown in Appendix A.~~

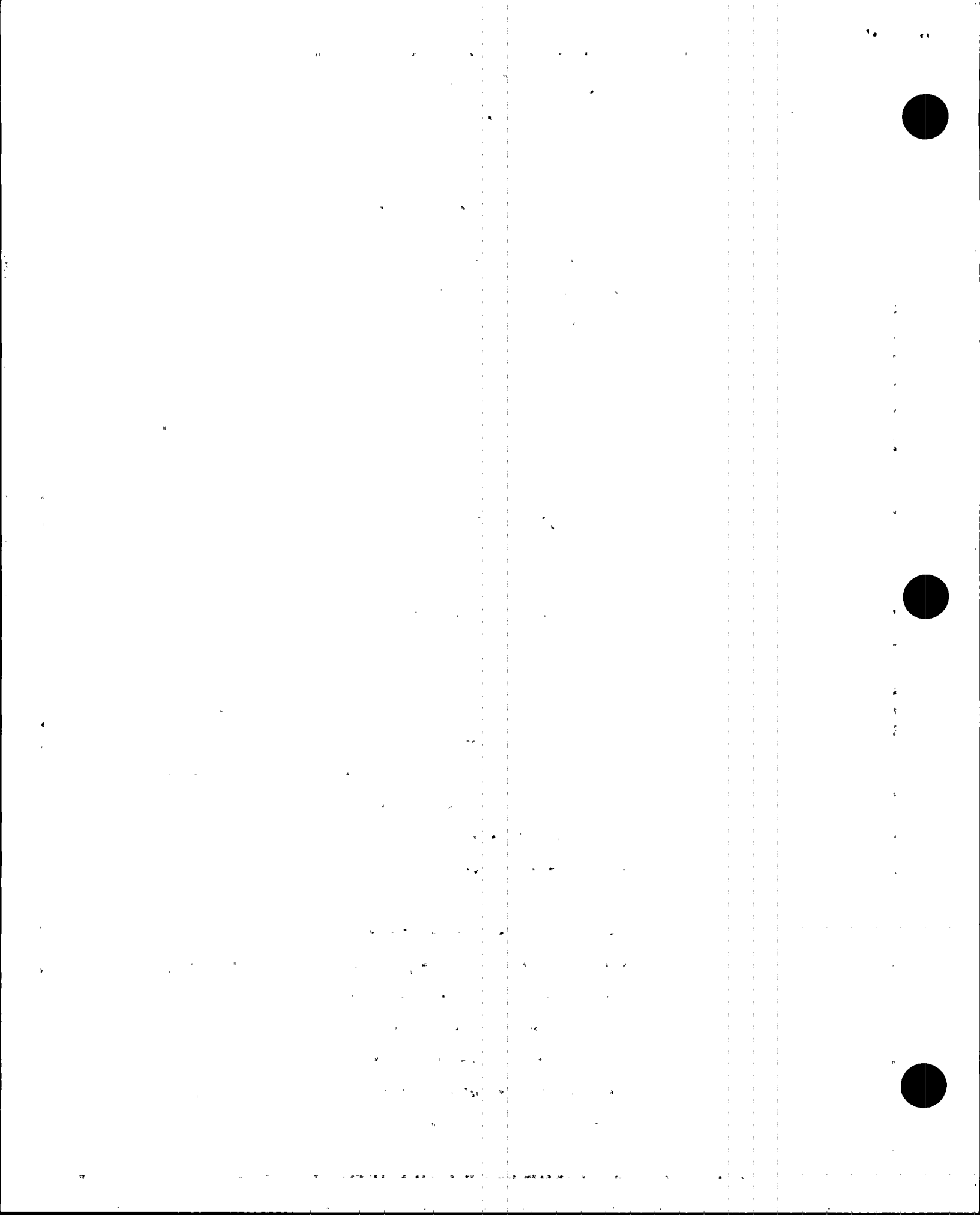
~~The Plant General Manager PSL and Plant General Manager PTN, through the respective Plant Vice President, are responsible for the safe operation of the nuclear plant. The Plant General Managers have control of the onsite resources necessary for the safe operation and maintenance regardless of organizational reporting.~~

~~The Plant Nuclear Safety Committee (PNSC) at Turkey Point Plant and the Facility Review Group (FRG) at the St. Lucie Plant are comprised of key plant management and staff personnel as described in the plant Technical Specifications. The PNSC/FRG serves the plant manager in a technical advisory capacity for the review of all safety-related procedures and activities that impact plant safety and the facility operating license.~~

~~1.3.1.2 Licensing and Special Programs~~

~~The Manager Licensing and Special Programs is responsible for selected licensing support activities at the Juno Beach Office. This includes:~~

- ~~o Advising senior Nuclear Division management on a regular basis of important developments in licensing areas which could significantly affect the Nuclear Division;~~
- ~~o Coordinating with the Law Department for Nuclear Division licensing hearings and legal services;~~





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- ~~o Administering special programs, such as:~~
 - ~~o Plant license renewal;~~
 - ~~o Environmental issues;~~
 - ~~o Self assessment;~~
 - ~~o INPO coordination;~~
 - ~~o Serving as FPL liason in matters of high level waste disposal.~~

~~1.3.1.3 Nuclear Engineering~~

~~The Vice President Nuclear Engineering is responsible for nuclear plant design and engineering support.~~

~~The Nuclear Engineering organization is shown in Appendix A.~~

~~a. Nuclear Engineering~~

~~Nuclear Engineering includes personnel located at both nuclear sites and at the corporate office. Nuclear Engineering performs design related activities and delegates design related activities to qualified contractors. For activities performed by Nuclear Engineering, the work is governed by FPL's Quality Assurance Program, and Nuclear Engineering is responsible for approval of the design output.~~

~~Delegated activities are performed in accordance with an FPL approved Quality Assurance Program and the contractor is responsible for approval of design output. Nuclear Engineering is responsible for defining the scope of delegated activities and the responsibilities of the contractor. Prior to the release of design outputs by contractor organizations, Nuclear Engineering ensures that the contractor is technically qualified to perform the design related activity.~~





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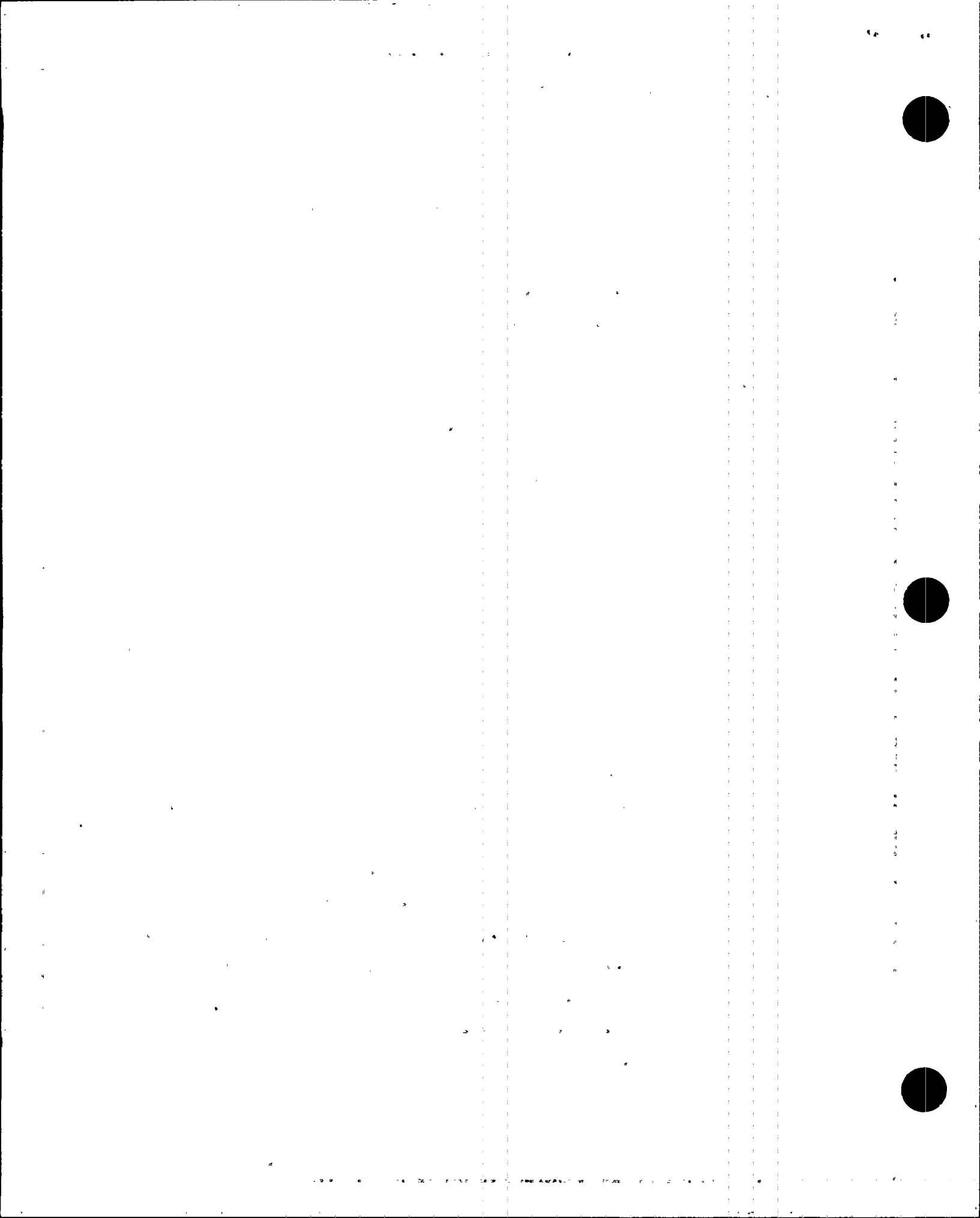
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~~The Manager—Turkey Point Engineering and the Manager—St. Lucie Engineering provide on-site engineering support and direct the engineering aspects of all FPL nuclear power plant projects during construction and operation to assure efficient, economical and reliable power plant design, conformance with engineering schedules and budgets and compliance with regulatory requirements.~~

~~Nuclear Engineering is responsible for:~~

- ~~o power plant design related aspects of the FPL Quality Assurance Program throughout all phases of plant life;~~
- ~~o development and maintenance of the design control program governing design related activities performed by Nuclear Engineering and for providing technical support to the Quality Assurance Department for assessing the adequacy, implementation and effectiveness of contractor design control programs;~~
- ~~o the preparation, revision, approval and distribution of plant design records that are identified to be maintained as "as constructed" drawings during plant operation;~~
- ~~o the development, control, and performance of certain aspects of items and services procurement, including establishment of procurement standards, the technical evaluation, equivalency evaluation, and commercial grade dedication of replacement parts/components for nuclear plants;~~
- ~~o review of the technical and quality requirements in procurement requisitioning documents and changes thereto for safety related and quality related items and services, as well as configuration control activities for controlled design documentation associated with procurement. The review shall be performed by individuals other than the document originator;~~



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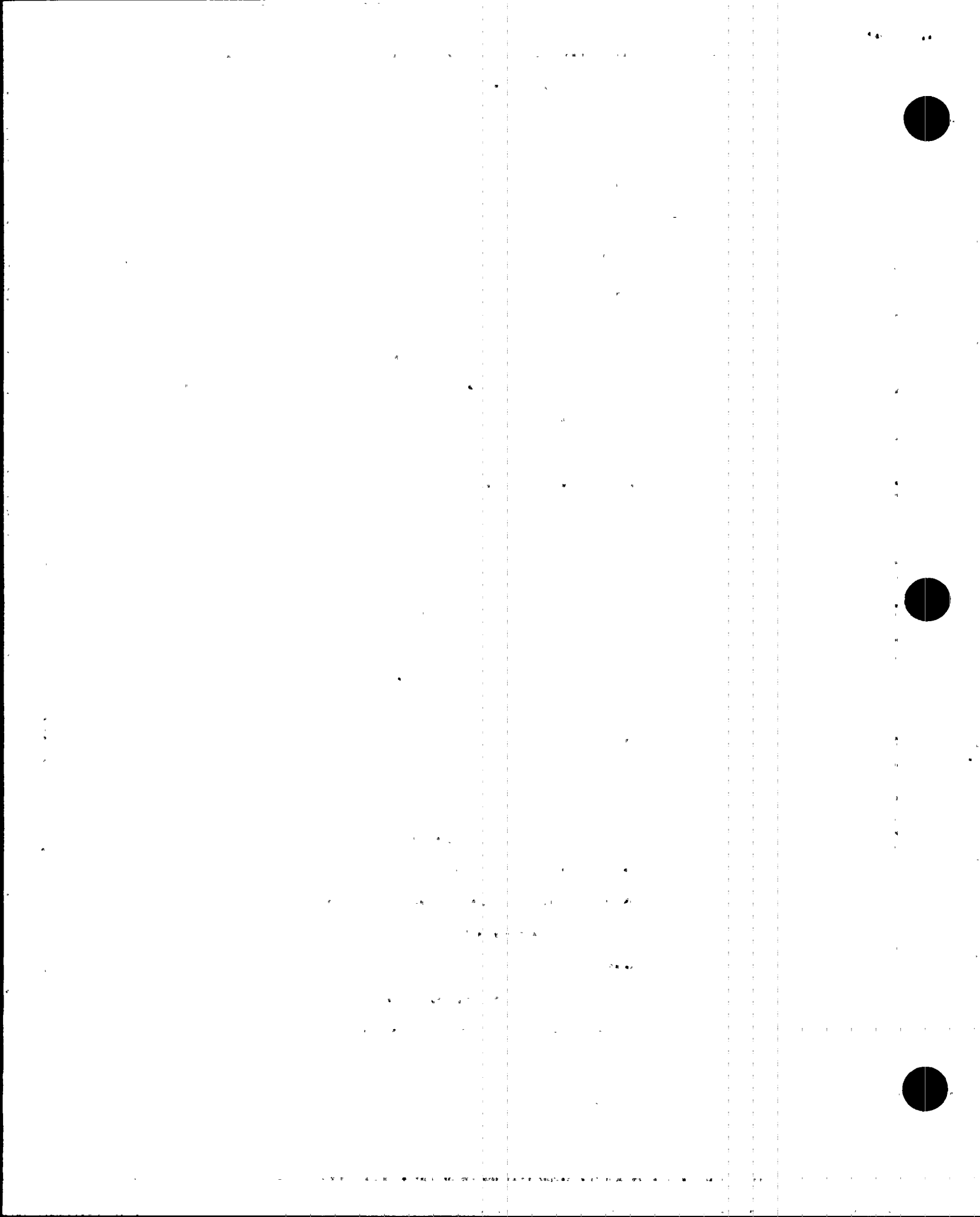
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~~Aspects of the above activities are performed by the Juno Beach Engineering organization as determined by the Vice President Nuclear Engineering.~~

~~b. Nuclear Fuel~~

~~The Manager Nuclear Fuel is responsible for nuclear fuel engineering and procurement activities including the following:~~

- ~~o assuring that technical and quality requirements (including inputs from other FPL departments) are incorporated in fuel contracts and letters of authorization;~~
- ~~o administering and managing contracts for nuclear fuel and related services to assure that technical and quality obligations are met, and serving as FPL liaison in all matters of nuclear fuel and fuel related contracts;~~
- ~~o administering and managing spent fuel disposal contracts with Department of Energy and serving as FPL liaison in matters of nuclear fuel;~~
- ~~o all fuel related design, analyses, reviews, and technical assistance necessary to ensure the safe, reliable, and economic operation of the nuclear plants;~~
- ~~o the development and/or review of fuel and nuclear physics design;~~
- ~~o implementing and maintaining the FPL corporate nuclear material accountability program as outlined in the FPL Special Nuclear Material Control Manual;~~
- ~~o providing support to the Quality Assurance Department for their auditing of nuclear fuel design and fuel assembly manufacturing;~~





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~~o performing audits and coordinating accountability reporting on all nuclear fuel.~~

~~e. Component Support and Inspections~~

~~The Manager Component Support and Inspections is responsible for providing support to the plants as follows:~~

- ~~o providing technical support of activities associated with component reliability, materials evaluations, inspections, corrosion protection, non-destructive examination, and ASME Section XI implementation/problem resolution for nuclear plant components;~~
- ~~o providing specific component expertise, metallurgical support, and non-destructive examination and inspections;~~
- ~~o establishing the FPL Welding Program to meet the requirements of the Quality Assurance Program and applicable codes and standards;~~
- ~~o developing, maintaining, and controlling the procedures and instructions to implement the FPL Welding Program; and~~
- ~~o originating and qualifying welding procedure specifications; and~~

~~d. Reliability and Risk Assessment~~

~~The Supervisor of Reliability and Risk Assessment is responsible for providing support to the plants as follows:~~

- ~~o prepare and maintain Probabilistic Safety Assessment (PSA) for each plant;~~
- ~~o perform Risk Assessments in support of Maintenance activities;~~
- ~~o perform Risk Assessments in support of the NRC Maintenance Rule.~~





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~~1.3.1.4 Nuclear Assurance~~

~~The Director Nuclear Assurance is responsible for the selection, technical direction, administrative control (e.g. performance appraisal, salary review, hire/fire, position assignment) staffing, training and development of personnel required for supervisory and operating continuity of the Quality Assurance Department, Nuclear Safety Speakout, and the CNRB Subcommittee. The Director Nuclear Assurance serves as the CNRB Chairman. The Director Nuclear Assurance also initiates QA Program policy changes when necessary. In addition, the Director Nuclear Assurance is responsible for selecting a team independent of the Quality Assurance Department to perform periodic audits of the Quality Assurance Department. The results of these audits are presented to the Director Nuclear Assurance and the Company Nuclear Review Board (CNRB).~~

~~The Nuclear Assurance organization is shown in Appendix A.~~

~~a. Nuclear Safety Speakout~~

~~The Nuclear Safety Speakout Program provides a forum for employees and contractors to communicate their concerns to FPL. Concerns are documented, investigated and corrective actions are taken when necessary. The program offers confidentiality.~~

~~b. Quality Assurance Department~~

~~The Quality Assurance Department is responsible for administering the FPL Quality Assurance Program. This includes developing and verifying implementation of corporate policies, plans, requirements, and procedures affecting quality. The Quality Assurance Department retains responsibility for delegated portions of the Quality Assurance Program~~





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ORGANIZATION.

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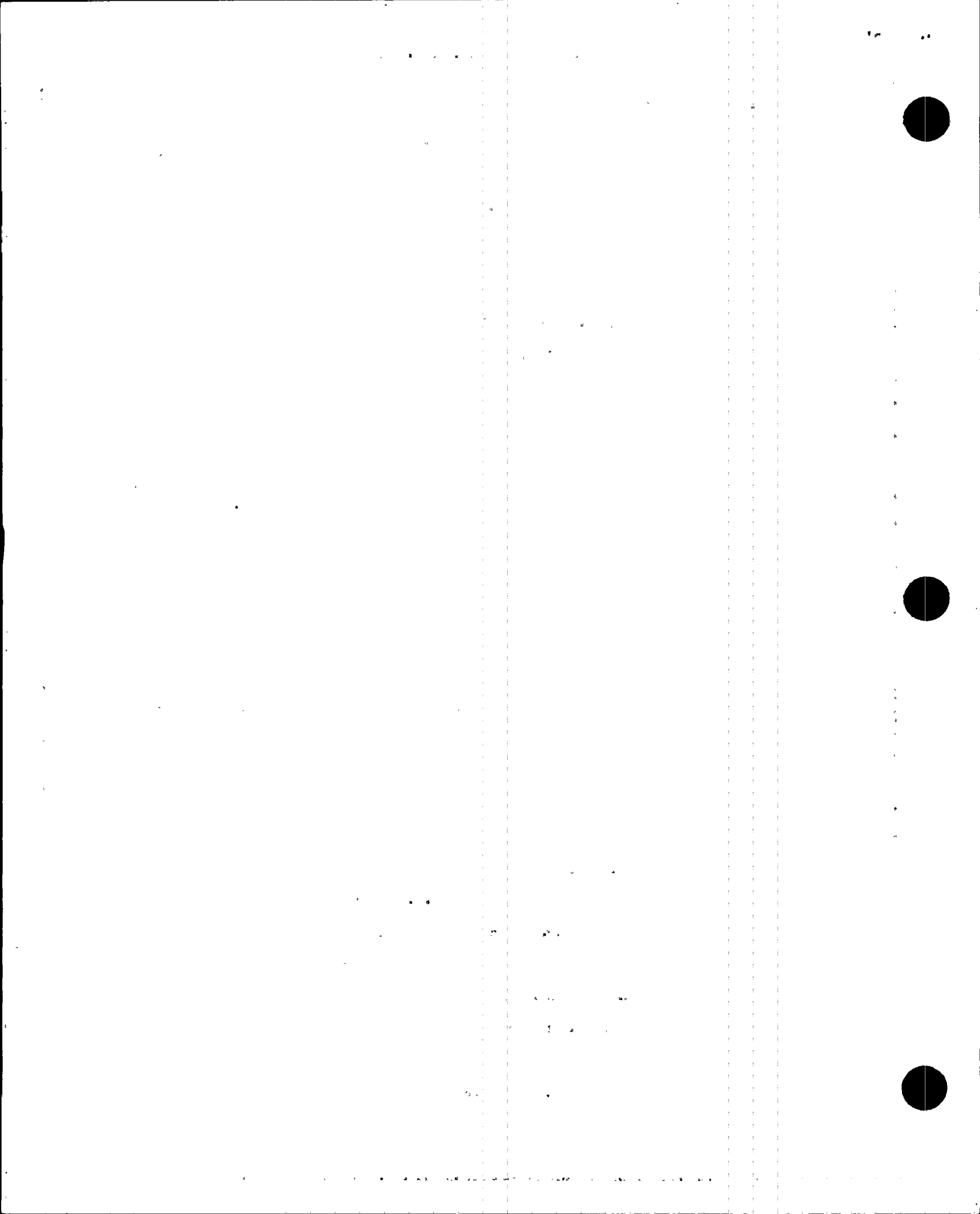
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~~by performing initial evaluation and subsequent periodic audits of the contractors' Quality Assurance Programs. The Quality Assurance Program responsibility further extends to the performance of audits within the Company to assure management that the established requirements and procedures are being implemented, and that the Program complies with the baseline document requirements.~~

~~The organizational freedom of the Quality Assurance function is accomplished through the corporate structure, illustrated in Appendix A, which provides independence from those departments responsible for design, procurement, engineering, construction and operation. With quality assurance as its sole function the Quality Assurance Department, both on site and off site, is completely free from the cost and scheduling pressures of design, procurement, construction and operation. The Quality Assurance Department has the freedom and authority to: a) identify quality problems; b) initiate, recommend or provide corrective action; c) verify implementation of the corrective action; and d) recommend the stoppage of work or operations adverse to quality, when necessary. The QA Supervisor Performance Assessment, QA Supervisor Procurement Quality, Site Quality Manager St. Lucie, and Site Quality Manager Turkey Point report administratively and functionally to the Director Nuclear Assurance. These reporting relationships assure that the Quality Assurance Department has direct access to the levels of management necessary to assure effective implementation of the Quality Assurance Program.~~

~~The duties, responsibilities, and authorities of each Quality Assurance group are described in the sections which follow.~~





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~~1) Performance Assessment~~

~~The QA Supervisor Performance Assessment directs and administers the Corporate Quality Assurance Program assuring compliance with the baseline documents listed in Appendix C of this Topical Quality Assurance Report. Quality Performance Assessment activities include the following:~~

- ~~o develop and maintain the corporate Quality Assurance Manual, including the administration of the Quality Assurance Program Review Committee (QAPRC);~~
- ~~o develop and implement a Quality Assurance indoctrination program for FPL personnel;~~
- ~~o prepare reports on Quality Assurance Program activities for review by the CNRB;~~
- ~~o plan, coordinate and implement a comprehensive system of periodic internal audits with support from the other Quality Assurance groups, when necessary;~~
- ~~o perform periodic activity audits of FPL procurement and associated documents and changes to these documents to assure that the necessary quality requirements are imposed;~~
- ~~o provide NDE Level III services including technical direction and monitoring of NDE activities performed by Quality Control at the plant sites (PTN and PSL).~~

~~2) Procurement Quality~~

~~The QA Supervisor Procurement Quality directs and administers the Procurement Quality program in support of both nuclear plants. Procurement Quality activities include the following:~~





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- ~~o perform appropriate surveillance of hardware during manufacture;~~
- ~~o develop and implement a program for auditing of supplier Quality Assurance/Quality Control programs including Architect Engineer/Nuclear Steam Supply System Suppliers;~~
- ~~o assist other FPL departments in the identification of quality problems associated with procurement and storage; initiate, recommend, or provide solution; and verify implementation of solutions;~~
- ~~o maintain the Quality Assurance Department list of approved suppliers;~~

~~For purchased items and services, the responsibility of this group extends through receipt of shipment or performance of contract.~~

~~3) Site Quality Assurance~~

~~Turkey Point Nuclear (PTN) and St. Lucie (PSL)~~

~~Quality Assurance activities at the plant sites (PTN and PSL) are accomplished by the respective site Quality Assurance groups, reporting to the Site Quality Manager. The Site Quality Manager has responsibility for on-site development and implementation of the Quality Assurance Program, including the following:~~

- ~~o coordinate the development and implementation of quality assurance policies, plans, requirements, and procedures at the plant site;~~
- ~~o perform audits, assessments and other observations as specified in procedures and instructions to verify compliance with Quality Assurance Program commitments;~~



THE
FEDERAL
BUREAU OF
INVESTIGATION
OF THE
DEPARTMENT OF JUSTICE
WASHINGTON, D. C. 20535

**TOPICAL QUALITY ASSURANCE REPORT**

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- ~~o perform periodic activity audits of site generated FPL procurement and associated documents and changes to these documents to assure that the necessary quality requirements are imposed;~~
- ~~o recommend stoppage of work or operations adverse to quality at the plant site in accordance with the appropriate instructions;~~
- ~~o review and comment on Quality Instructions or equivalent quality administrative procedures prior to issue, with respect to the requirements of the FPL Quality Assurance Program, the applicable Final Safety Analysis Report, and the applicable Technical Specifications;~~
- ~~o perform audits of the architect engineer and Nuclear Steam Supply System suppliers both on-site and off-site, in conjunction with the Procurement Quality group.~~

~~The interface with the Procurement Quality group ends with the receipt of a shipment of nuclear safety related equipment at the plant site. The Quality Assurance program for the shipment is then within the purview of the Site Quality Assurance group.~~

~~The Quality Manager Turkey Point and Quality Manager St. Lucie are additionally responsible for the establishment and implementation of quality control aspects of the Quality Assurance Program at the plant site. Reporting directly to the Site Quality Manager are the Quality Control Supervisors who have the authority and freedom to administer the Quality Control program and, when necessary, to stop activities adverse to quality. The Quality Control Supervisors and~~





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~~personnel performing Quality Control inspection functions are required to be independent of groups or persons performing activities that they may be required to verify or inspect.~~

~~Quality Control responsibilities include:~~

- ~~o inspection, monitoring, surveillance, and review of plant activities to verify compliance with the provision of the facility operating license and the Quality Assurance Manual;~~
- ~~o acceptance of the installed items;~~

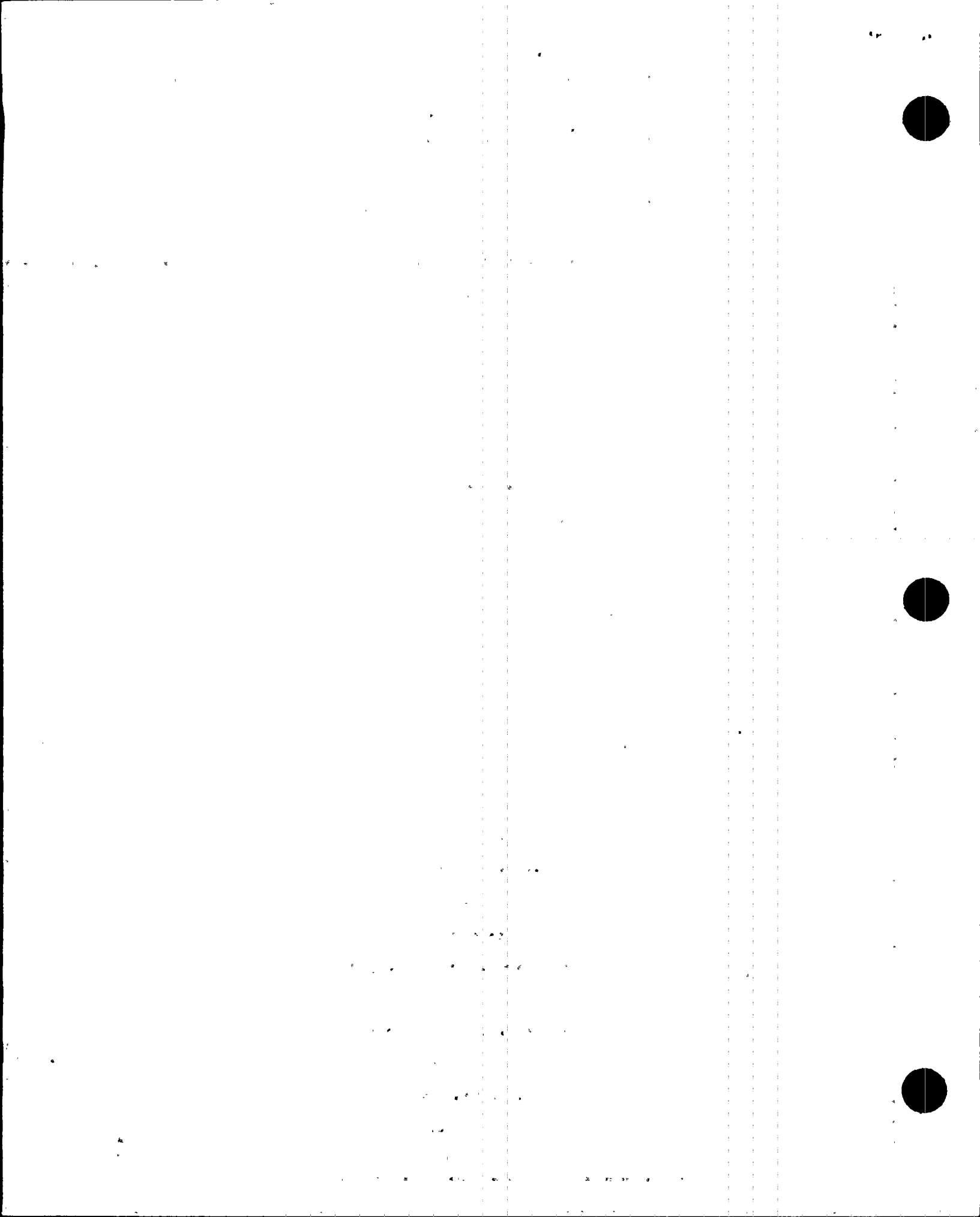
~~1.3.1.5 Nuclear Business Services~~

~~The Director Business Services is responsible for Nuclear Division business and financial planning and analysis and nuclear plant support in the areas of document control and QA records management, division based and staff computer systems, security, emergency preparedness, and radiological services.~~

~~Nuclear Business Services is shown in Appendix A.~~

~~*Accountabilities related to division based and staff computer systems encompass:~~

- ~~o directing the identification, design, development, implementation, on-going maintenance, and control of division based information management systems;~~
- ~~o identifying applicable division based software in a Computer Software Index (CSI);~~
- ~~o Coordinating and directing computer hardware and telecommunication planning and control;~~





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- ~~o ensuring that the information management programs are in compliance with FPL software QA commitments.~~

~~1.3.2 Support Departments~~

~~Providing support activities for the Nuclear Division are Corporate Records, Environmental Affairs, Protection & Control Systems, and Information Management. The reporting relationship of each department is described in the following sections and is shown in Appendix A.~~

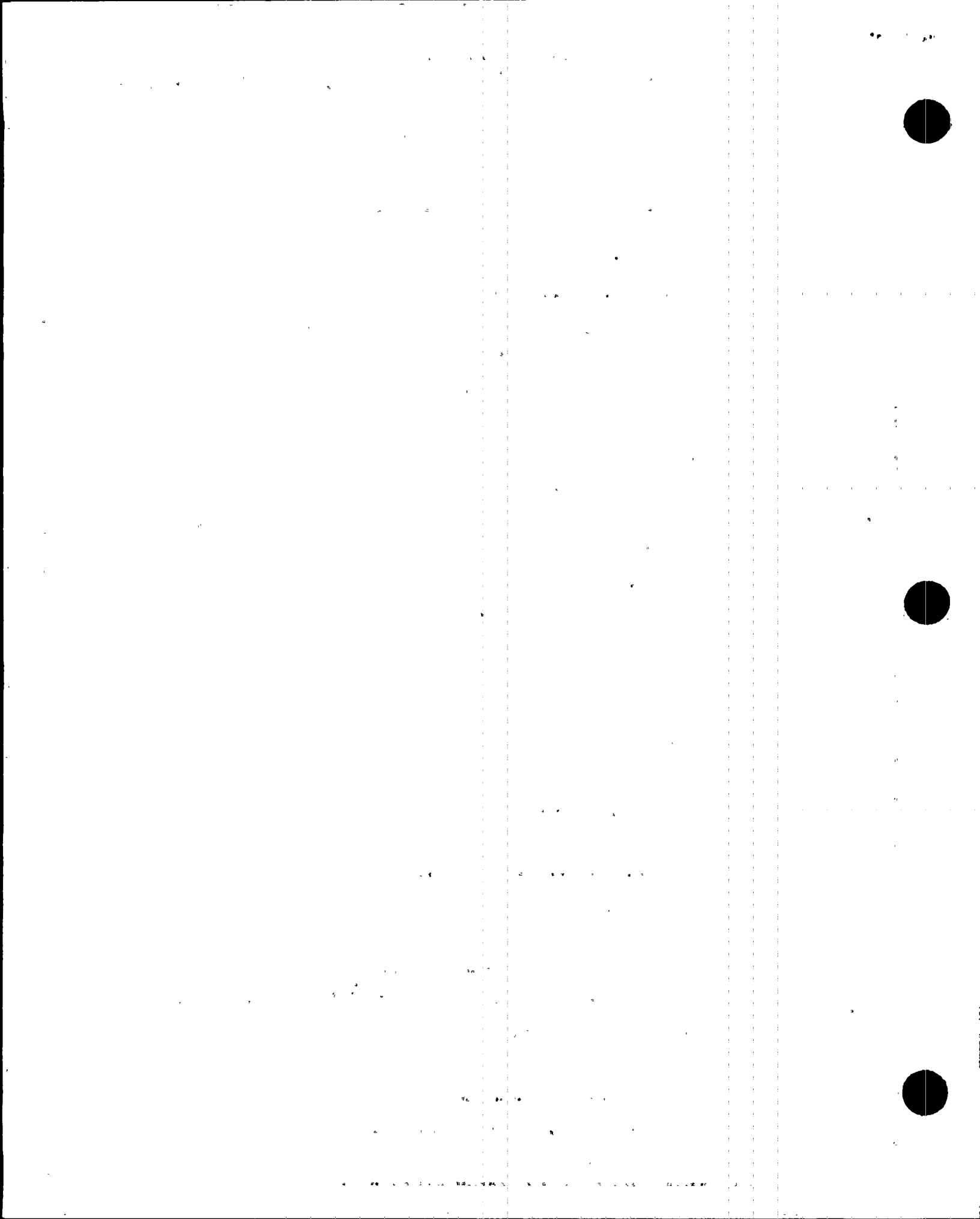
~~1.3.2.1 Corporate Records~~

~~The Supervisor Corporate Records is responsible for:~~

- ~~o storage, retrieval and control of Quality Assurance records received from other departments;~~
- ~~o assisting with the development and implementation of records and micrographics programs;~~
- ~~o maintaining a QARSET approved storage facility;~~
- ~~o serving as the Records Official.~~

~~1.3.2.1.a The Records Official, reporting to the General Counsel and Secretary is responsible for:~~

- ~~o ensuring the Quality Assurance records program activities are managed in accordance with applicable recordkeeping requirements;~~
- ~~o locating acceptable record storage areas when requested;~~
- ~~o leading the evaluation of specially designated QARSET approved storage facilities, maintaining records of this evaluation, and establishing schedules to assure that re-evaluations are performed every two (2) years.~~





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~~1.3.2.2 Environmental Services~~

~~Environmental Services is responsible for obtaining the federal and state environmental permits required for FPL facilities and operations. Environmental Services is also responsible for providing technical support on environmental regulatory requirements, including regulatory development, enforcement actions, compliance with environmental requirements and environmental assessments and clean-ups at all company facilities, as well as technical support and/or advice on non-radiological environmental monitoring (federal and state) programs at the nuclear power plant sites.~~

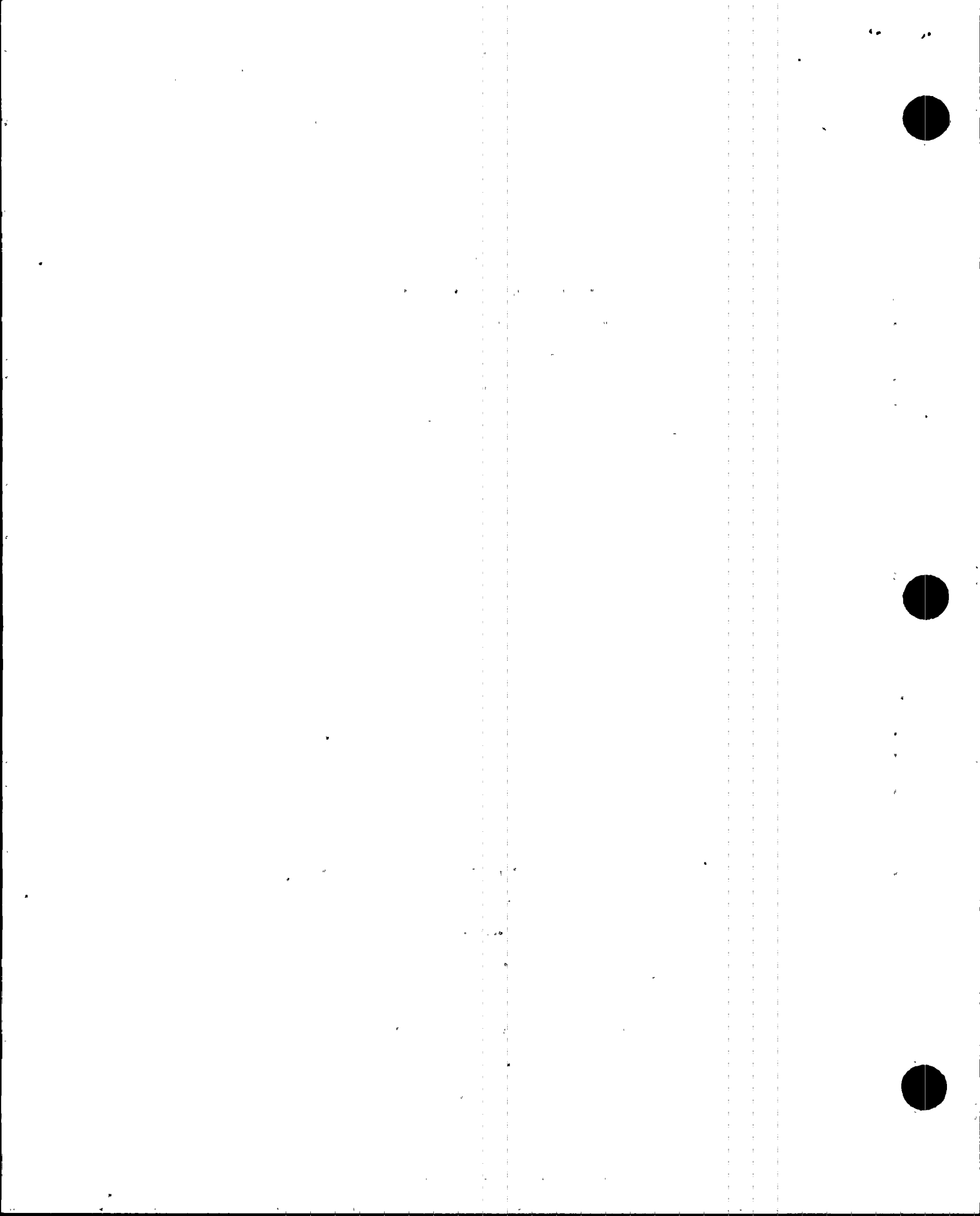
~~The Site Vice President has overall responsibility for implementation of the Environmental Protection Plans (EPPs) at nuclear power plant sites.~~

~~The Environmental Services Department through its functional areas is responsible for providing technical support and/or advice on non-radiological environmental monitoring programs and oversight of other requirements related to the Environmental Protection Plans. The Department provides review of proposed changes to the Environmental Protection Plans, review of plant changes, tests or experiments and review of other plant activities which may be subject to environmental regulations to ensure their compliance.~~

~~The Department provides information as necessary to the CNRB Chairman on environmental matters for which requirements are included in Environmental Protection Plans.~~

~~1.3.2.3 Protection & Control Systems~~

~~The Director of Protection & Control Systems reports to the Vice President of Power Delivery.~~





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~~Protection & Control Systems is responsible for:~~

- ~~o test, calibration and maintenance of certain high voltage electrical protective relays for safety related systems of the nuclear plant;~~
- ~~o final wiring connection checks;~~
- ~~o preoperational check out and test of system protection devices;~~
- ~~o providing inspection of equipment under their cognizance;~~
- ~~o providing certain setpoint and checkpoint values for protective devices.~~

~~1.3.2.4 Information Management~~

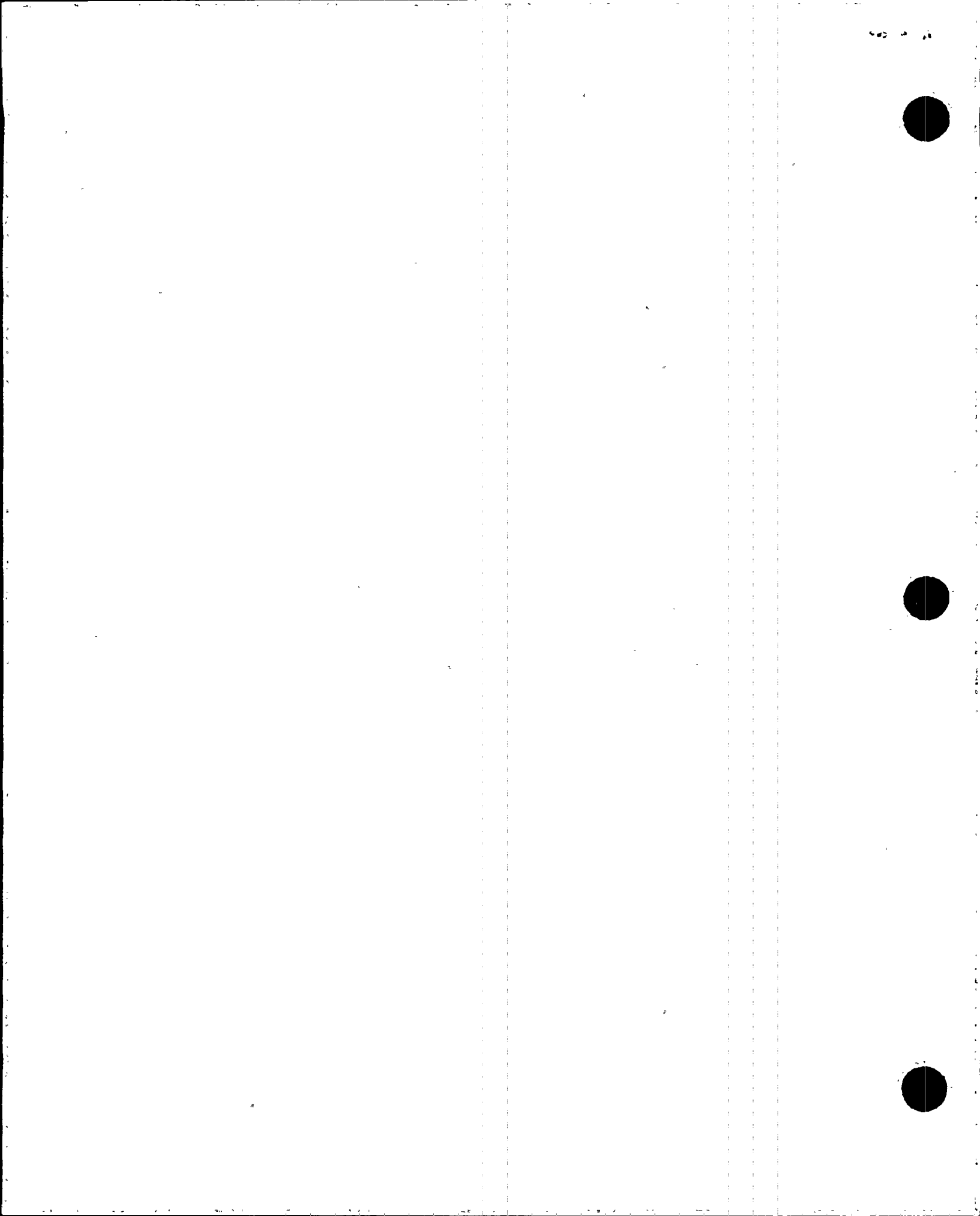
~~The Corporate Information Management organization is shown in Appendix A.~~

~~Information Management is responsible for ensuring the integrity of the operating environment and the applications used by the Nuclear Division. The Director of IT Operations and the Director of Business Systems report to the Vice President of Information Management.~~

~~1.3.2.4.a The Director of IT Operations is responsible for:~~

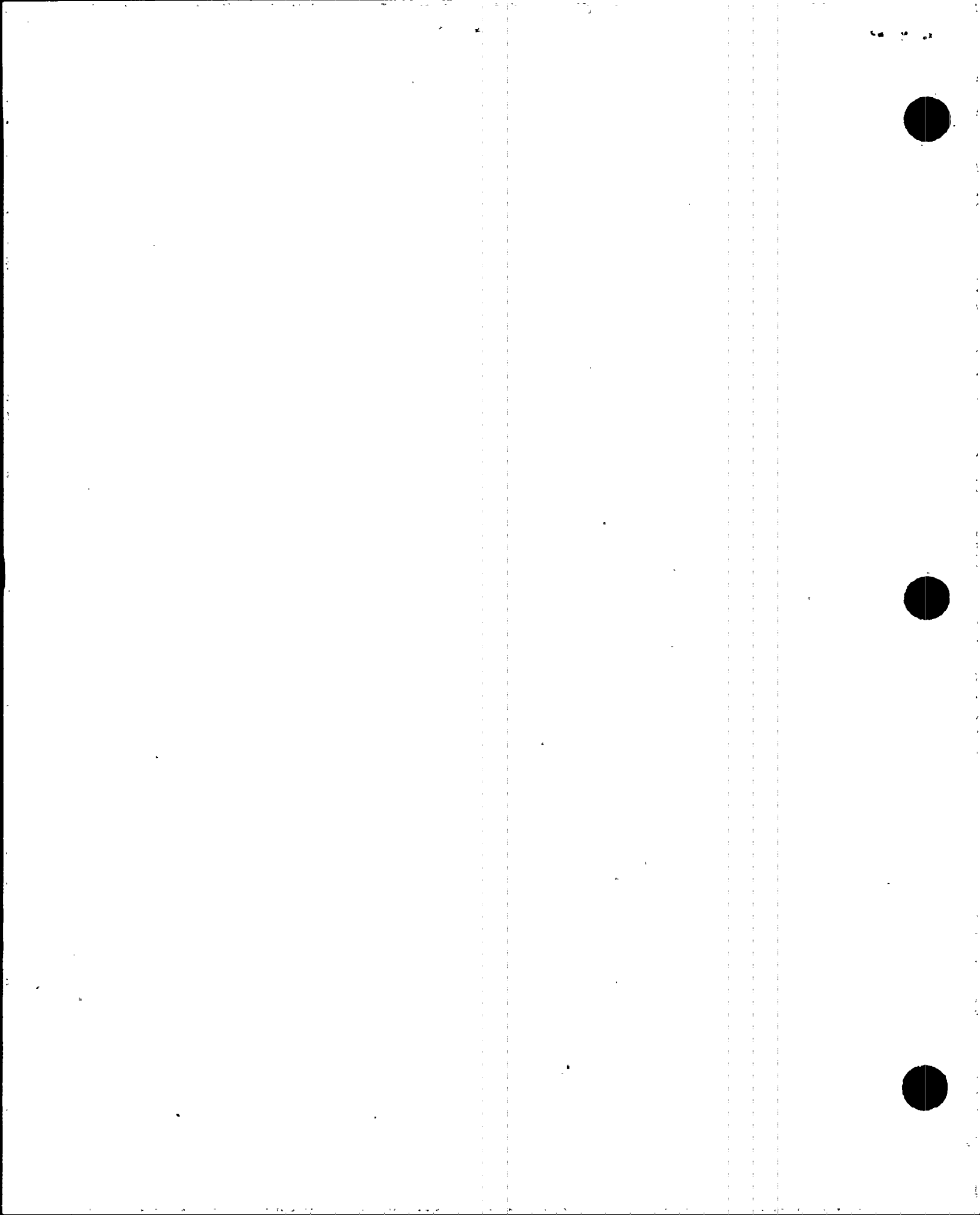
- ~~o the installation and maintenance of operating system software and the operation of computer hardware for FPL's corporate computer system;~~
- ~~o executing software production release and change control activities.~~

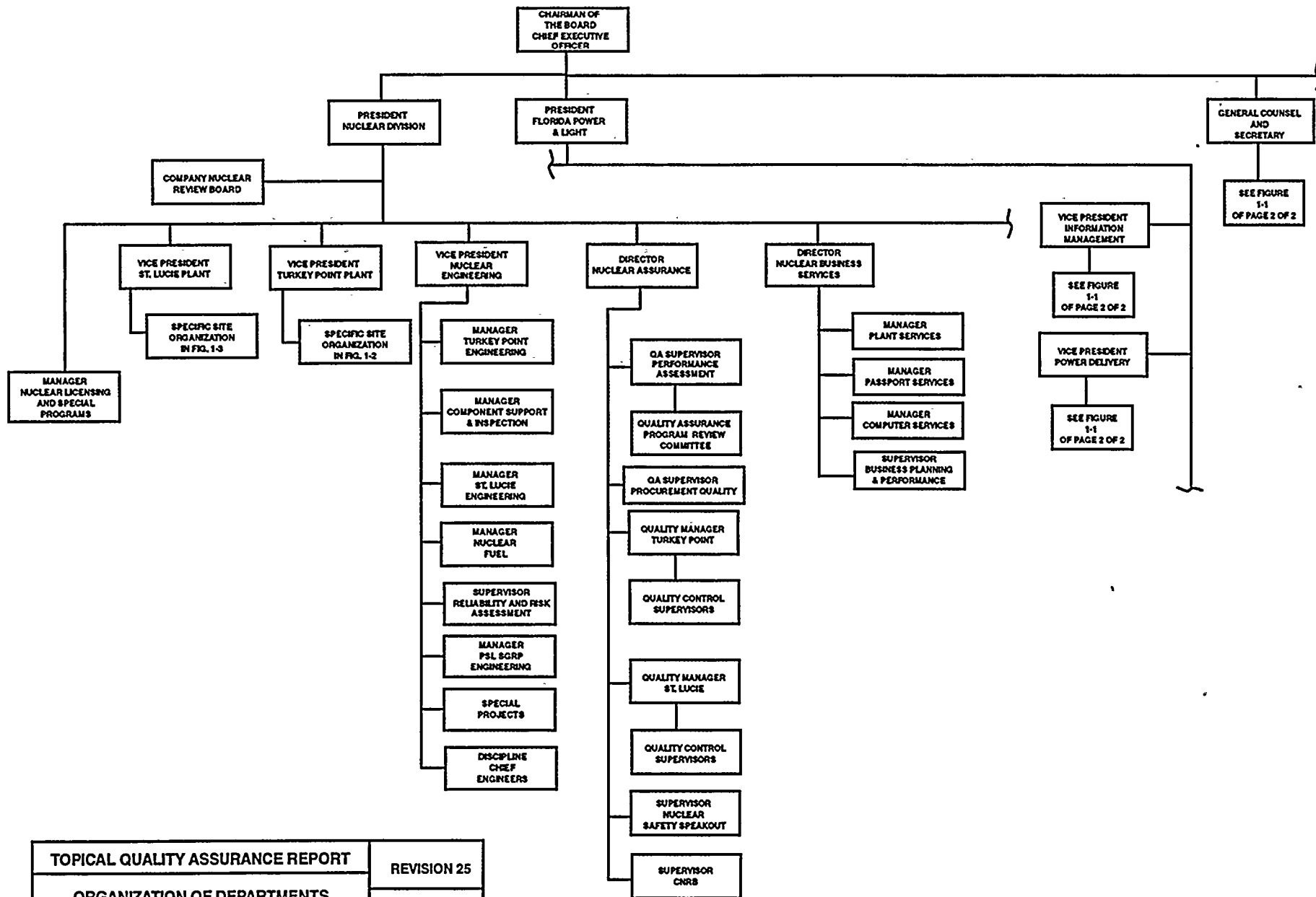
~~1.3.2.4.b The Director of Business Systems is responsible for administering physical databases and providing on going technical support.~~



ATTACHMENT D

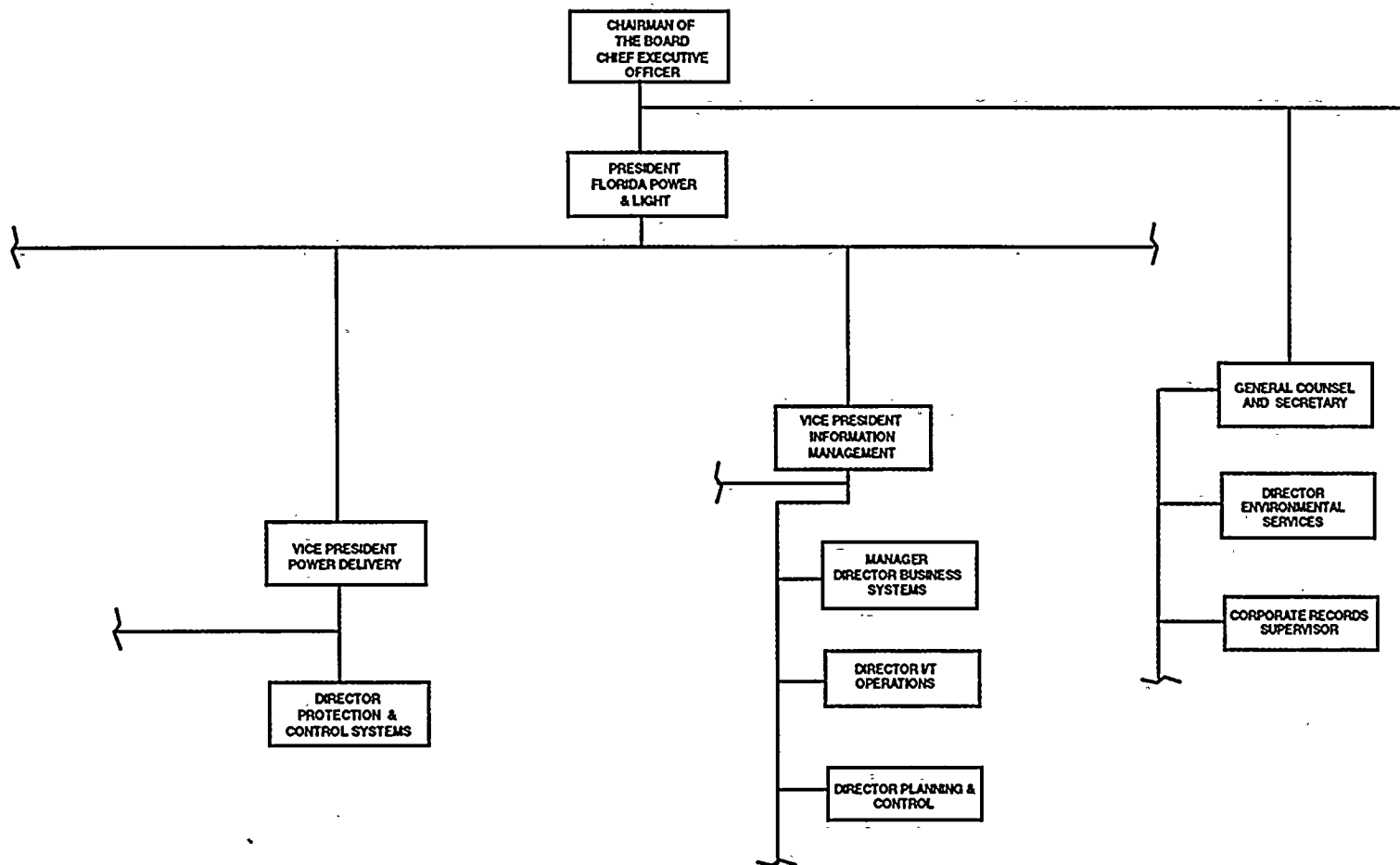
**TQAR
Appendix A
(For Reference Only)**





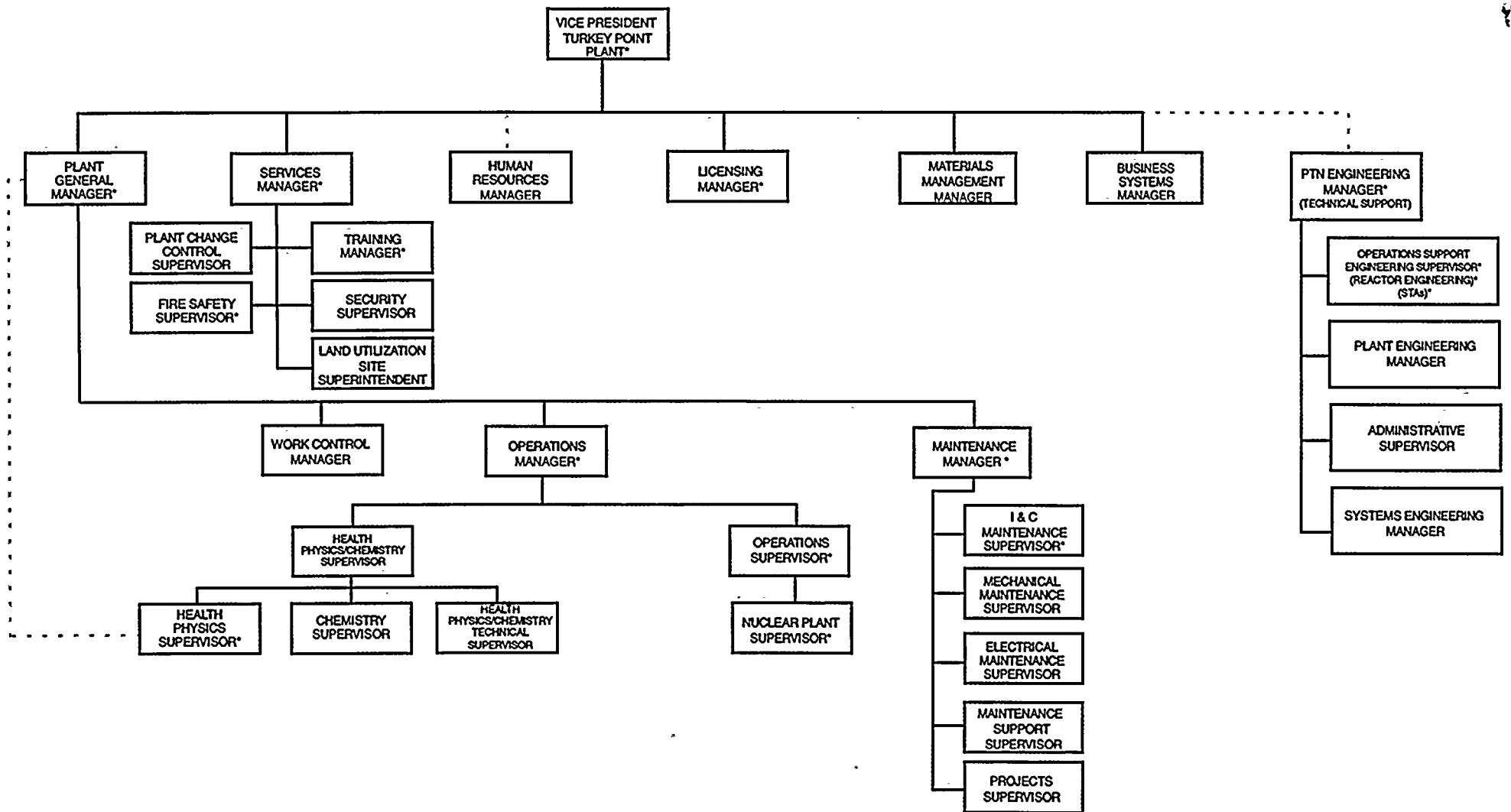
TOPICAL QUALITY ASSURANCE REPORT	REVISION 25
ORGANIZATION OF DEPARTMENTS AFFECTING QUALITY	04/16/97
FIGURE 1-1	PAGE 1 OF 2
APPENDIX A	
NUCLEAR DIVISION	





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ORGANIZATION OF DEPARTMENTS AFFECTING QUALITY FIGURE 1-1 APPENDIX A NUCLEAR DIVISION	04/16/97
	PAGE 2 OF 2





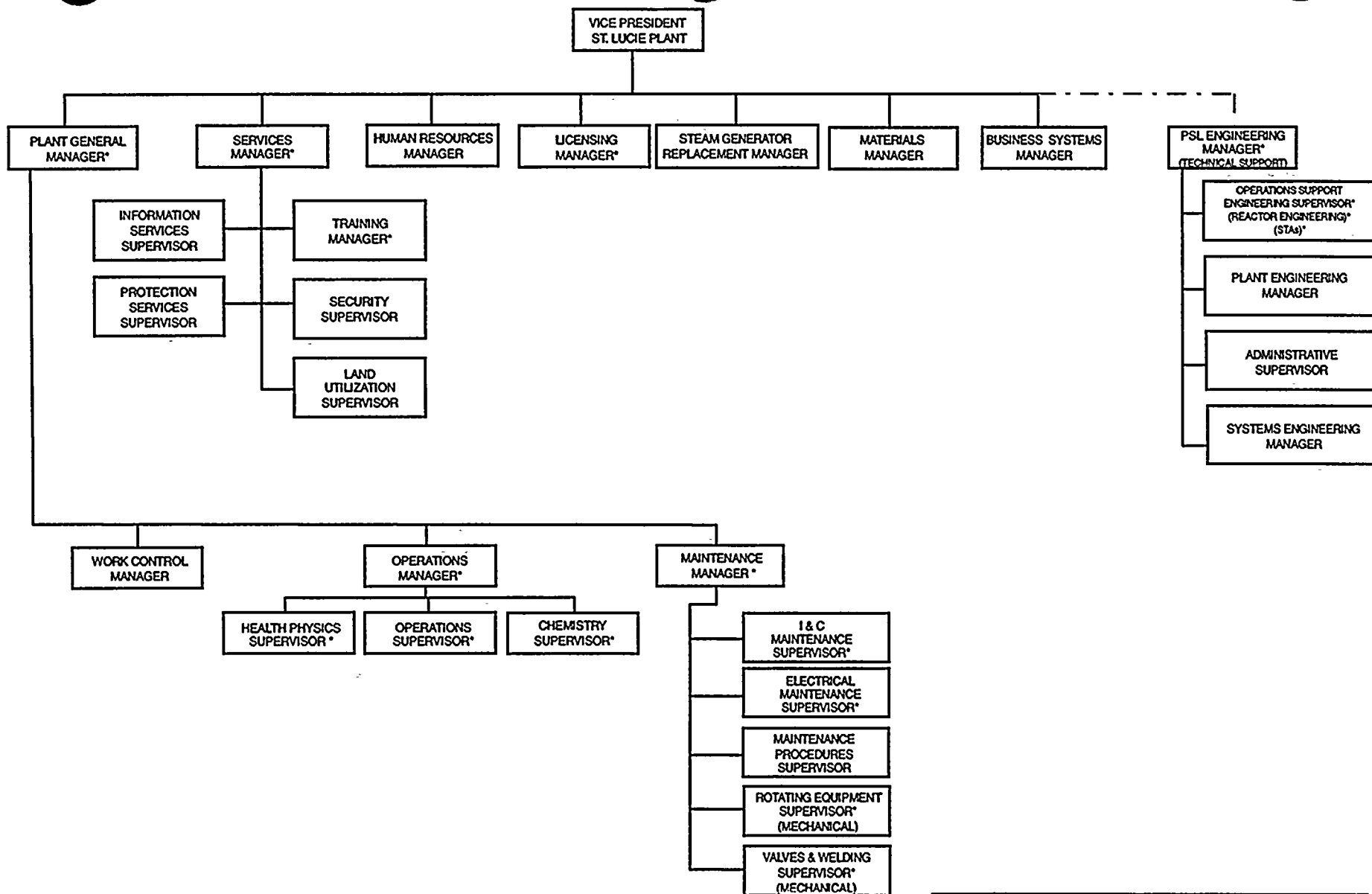
*Indicates position with accountabilities in Technical Specifications.

NOTES

- Although Operations Support Engineering (OSE) personnel may report to the site Engineering Manager, the Plant General Manager shall have direct and unfettered control over those activities necessary for safe operation and maintenance of the plant.
- The Health Physics Supervisor shall have direct access to the Plant General Manager for matters relating to the radiological health and safety of employees and the public.

TOPICAL QUALITY ASSURANCE REPORT	REVISION 12
TURKEY POINT PLANT SITE ORGANIZATION FIGURE 1-2 APPENDIX A	03/28/97
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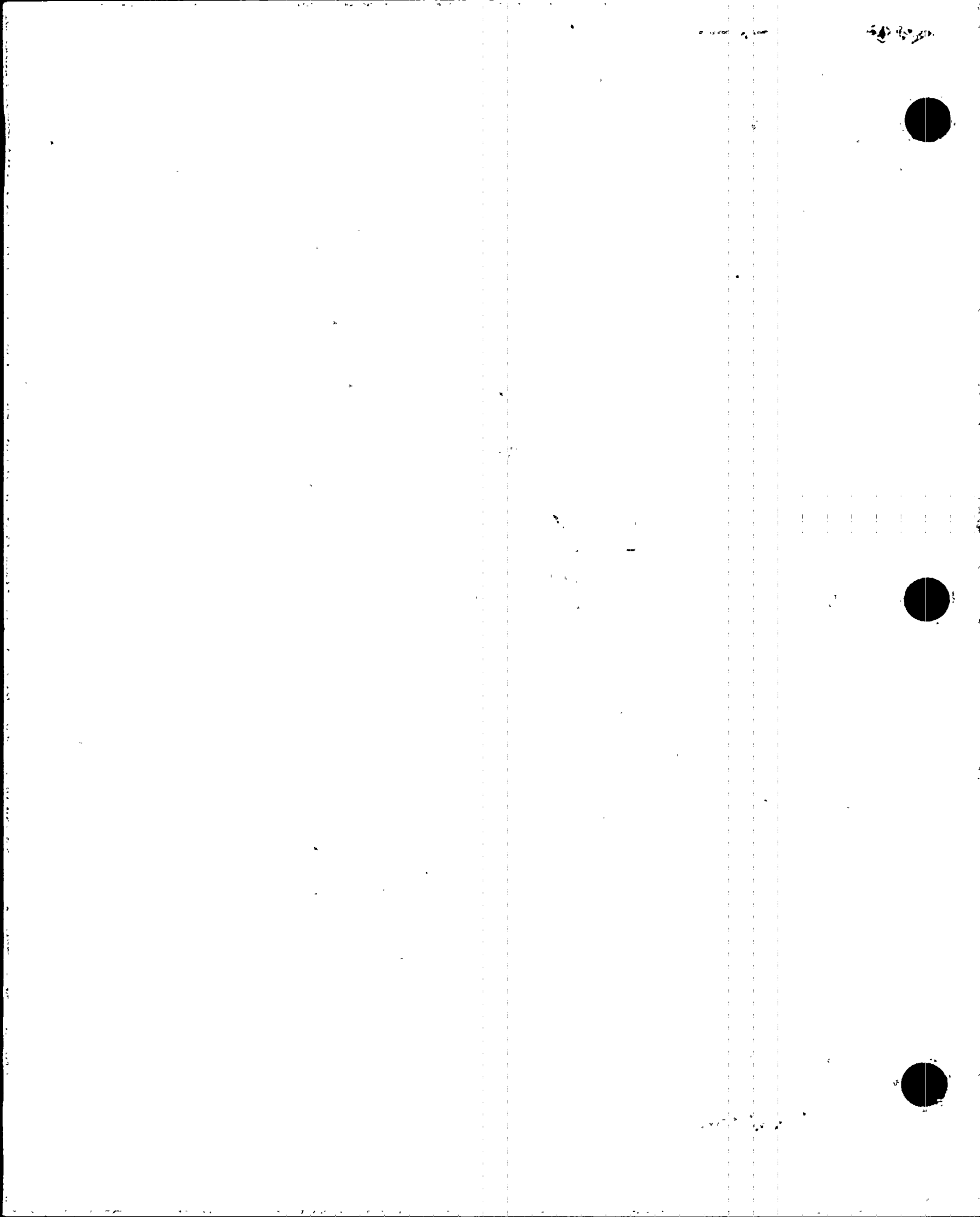


*Indicates position with accountabilities in Technical Specifications.

NOTE

Although Operations Support Engineering (OSE) personnel may report to the Site Engineering Manager, the Plant General Manager shall have direct and unfettered control over those OSE resources necessary for safe operation and maintenance of the plant.

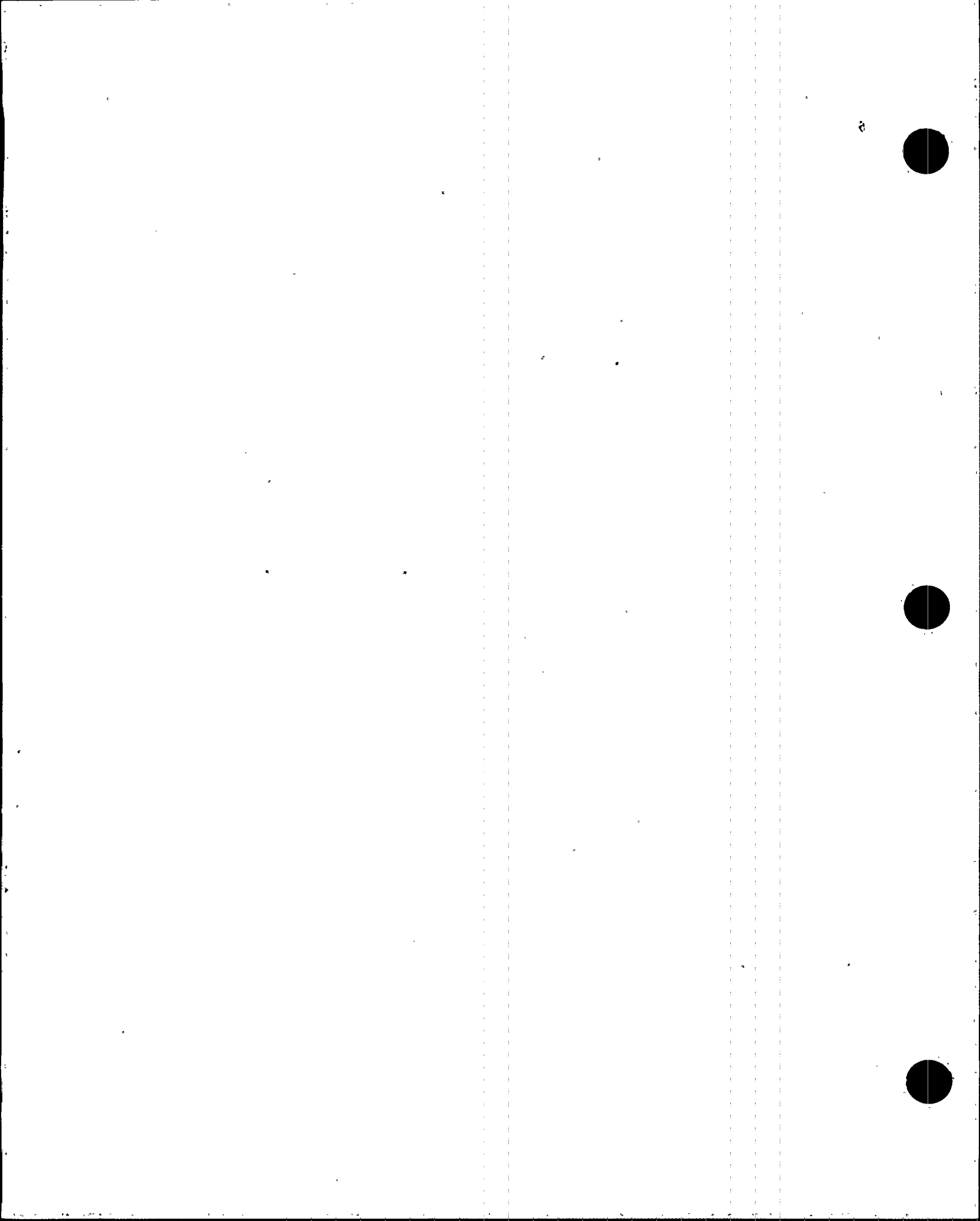
TOPICAL QUALITY ASSURANCE REPORT	
ST. LUCIE PLANT, UNIT 1 & 2 SITE ORGANIZATION FIGURE 1-3 APPENDIX A	REVISION 9
	03/28/97
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ATTACHMENT 1

**CONSUMERS ENERGY COMPANY
PALISADES PLANT
DOCKET 50-255**

INSERVICE INSPECTION PROGRAM - RELIEF REQUEST NO. RR-4



RELIEF REQUEST NUMBER - RR-4

COMPONENT IDENTIFICATION

Code Class	1
Code Reference	IWB-2500 Table IWB-2500-1
Examination Category	B-D
Item Number	B3.130
Component Description	Steam Generator Nozzle to Head Welds, 1-104-251, 1-102-251A, 1-102-251B, 2-104-351, 2-102-351A, 2-102-351B
Reference Drawings	RSG90-C251-001 and RSG90-C251-003 Figure IWB-2500-7(a)

CODE REQUIREMENT

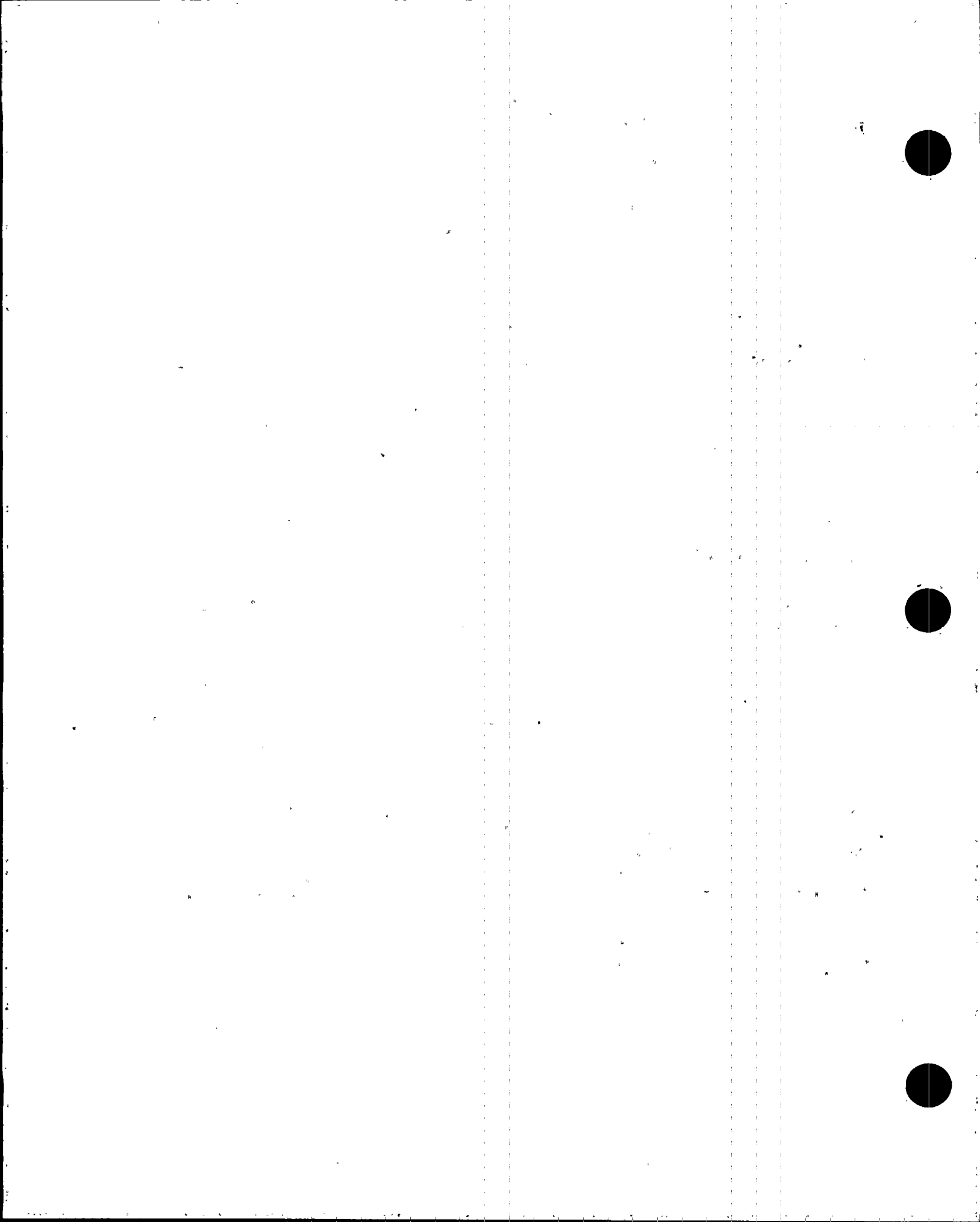
Section XI, Table IWB-2500-1 requires all steam generator nozzle to head welds to be 100% volumetrically examined once during each inspection interval.

BASIS FOR RELIEF

A relief request from the code required examination volumes is necessary as the code required volumes cannot be achieved due to the physical geometries of the nozzles within the steam generator vessel heads.

For purposes of discussion, Figure IWB-2500-7(a) (attached) will be used to describe the 4 required weld volumes. With the exception of the nozzle inner radius section, this figure is the closest configuration to our actual nozzles.

Consumers Energy working with EPRI have developed the attached report. The EPRI report identifies the code required examination volumes, exam volumes within the areas of limitations, exam volumes where no limitations exist and the composite exam volumes which can be examined. The EPRI report was also compared to past field examinations to verify these examination limitations.



The attached package includes:

- 1) Figure defining exam volumes.
- 2) Inlet nozzle inner radius coverage table followed by supporting figure.
- 3) Inlet nozzle-to-head weld exam volume.
- 4) Axial scan coverage table for inlet nozzle-to-head weld followed by supporting figures.
- 5) Transverse scan (no probe skewing) coverage table for inlet nozzle-to-head weld followed by supporting figures.
- 6) Transverse scan ($\pm 20^\circ$ probe skewing) coverage table for inlet nozzle-to-head weld followed by supporting figures.
- 7) Outlet nozzle inner radius coverage table followed by supporting figure.
- 8) Outlet nozzle-to-head weld exam volume.
- 9) Axial scan coverage table for outlet nozzle-to-head weld followed by supporting figures.
- 10) Transverse scan (no probe skewing) coverage table for outlet nozzle-to-head weld followed by supporting figures.
- 11) Transverse scan ($\pm 20^\circ$ probe skewing) coverage table for outlet nozzle-to-head weld followed by supporting figures.

There are 2 acronyms used in the EPRI report for identification, they are Consumers Power - Steam Generator Project Inlet Nozzle (CP-SGPIN) and Consumers Power - Steam Generator Project Outlet Nozzles (CP-SGPON).

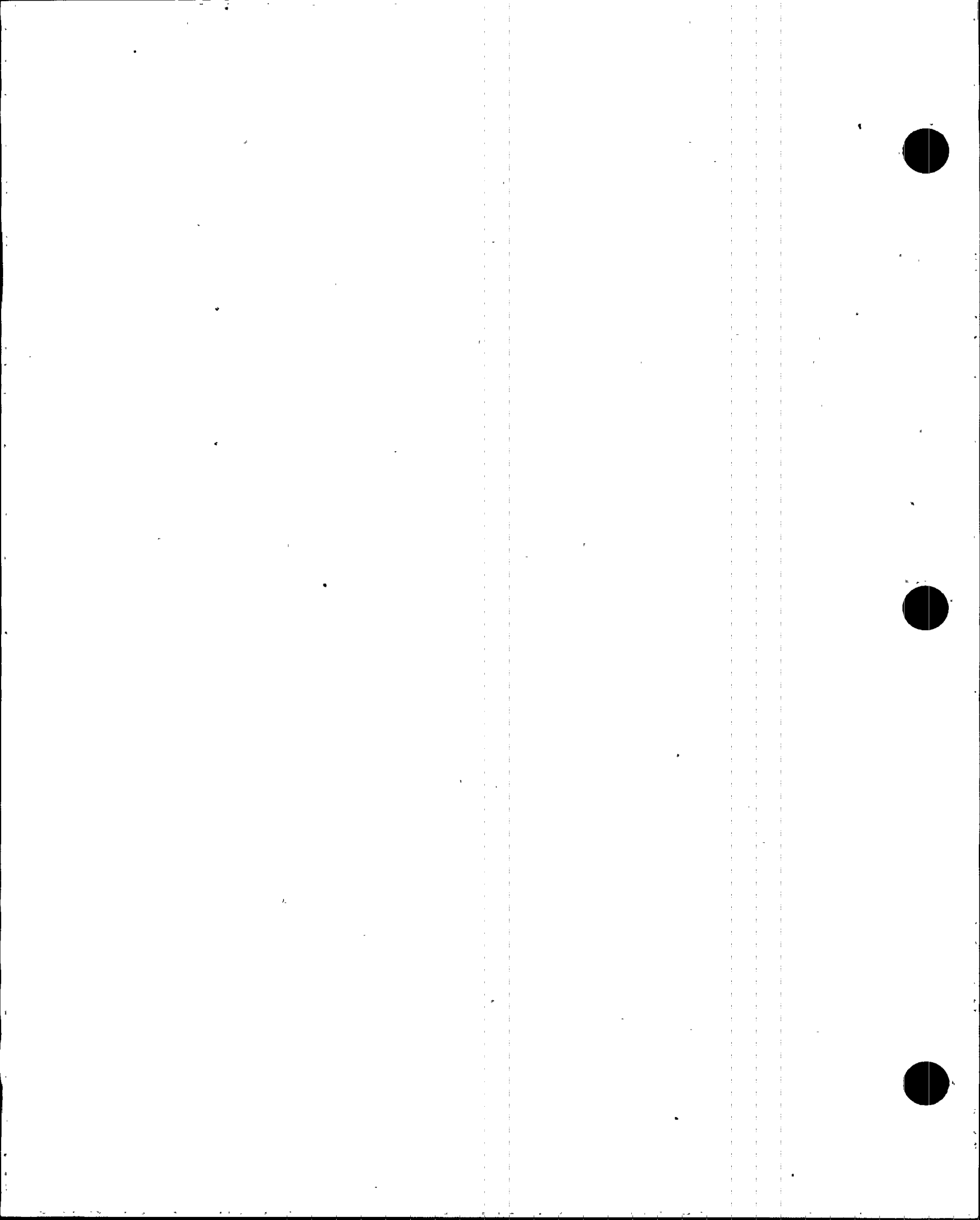
The computer based modeling was performed on one steam generator and this is intended to address all primary head nozzle welds in both steam generators. The steam generators are identical in design.

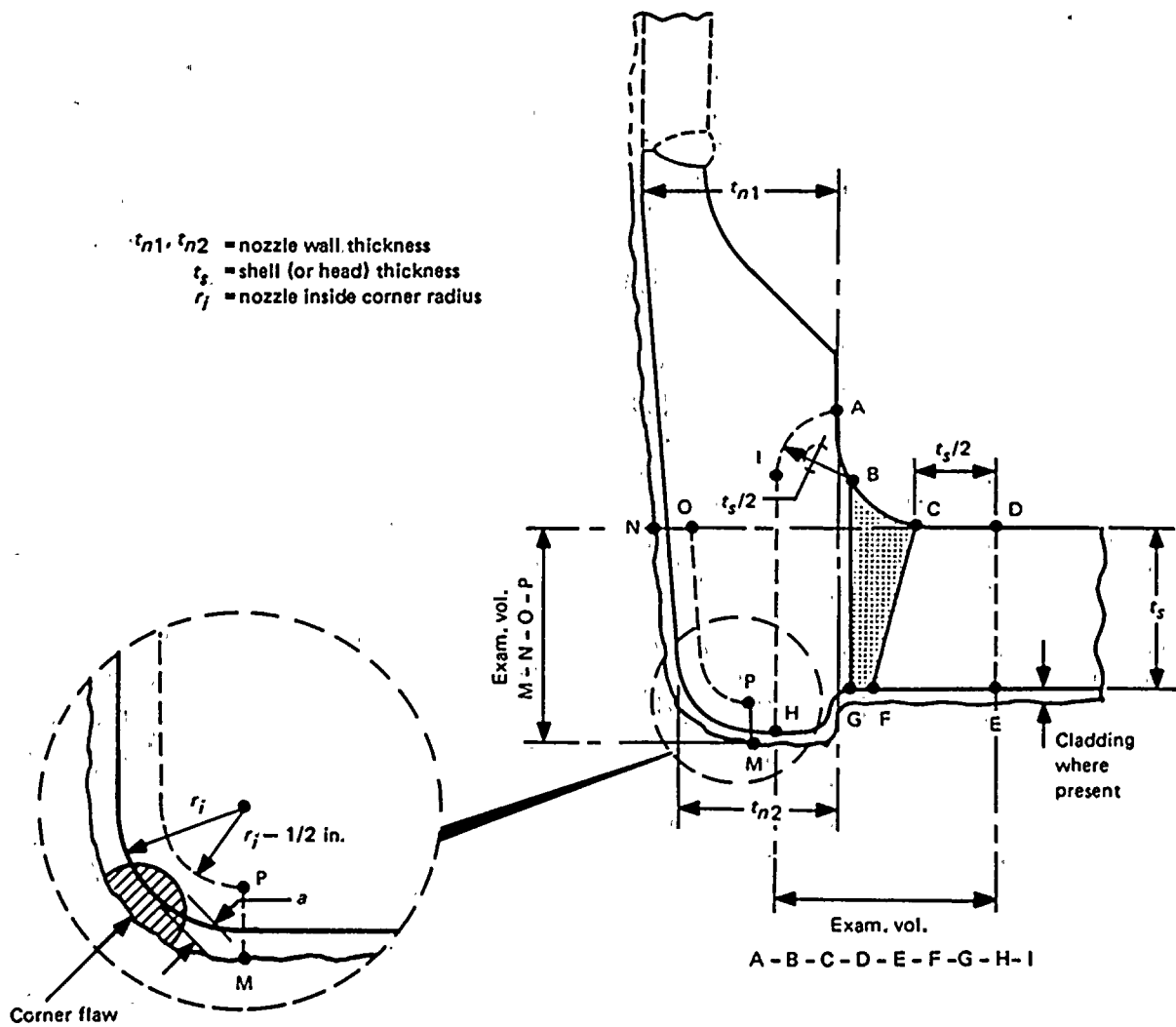
The probe skew angle for the axial exams are identified as 0° and 180° within the coverage tables. The probe skew angle for the transverse exams were modeled using a 90° and then offset using a 70° and 110° skew to increase exam volume coverages.

In summary, the examination volumes are limited and the maximum achievable volumes within the areas of limitations are accurately identified.

PROPOSED ALTERNATIVE EXAMINATION

The accessible weld volumes, as identified in the EPRI report, will be examined once per interval in lieu of the ASME Section XI 100% volumetric examination requirements.





EXAMINATION REGION [Note (1)]

- Shell (or head) adjoining region
- Attachment weld region
- Nozzle cylinder region
- Nozzle inside corner region

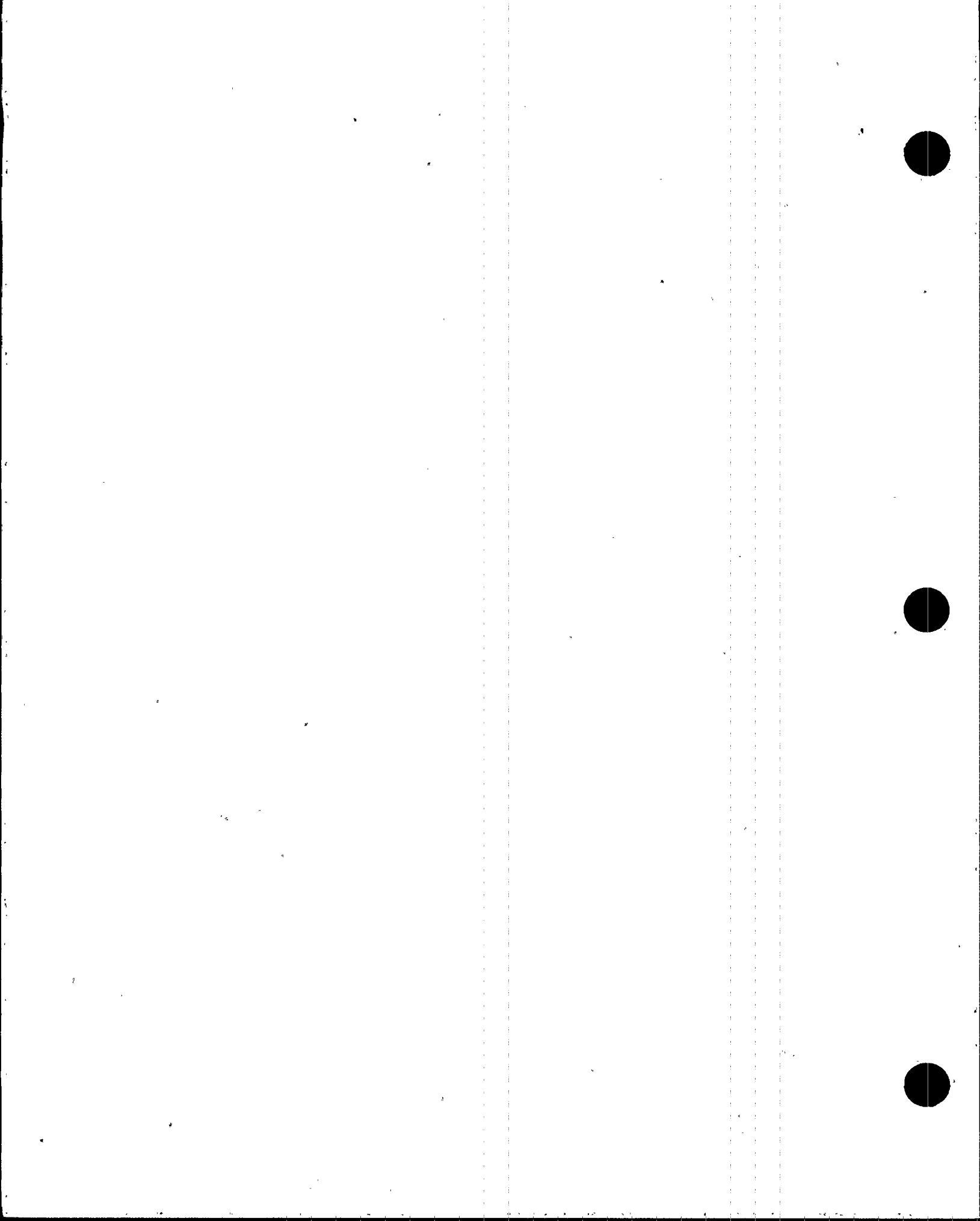
EXAMINATION VOLUME [Note (2)]

- C-D-E-F
- B-C-F-G
- A-B-G-H-I
- M-N-O-P

NOTES:

- (1) Examination regions are identified for the purpose of differentiating the acceptance standards in IWB-3512.
- (2) Examination volumes may be determined either by direct measurements on the component or by measurements based on design drawings.

FIG. IWB-2500-7(a) NOZZLE IN SHELL OR HEAD
 (Examination Zones in Barrel Type Nozzles Joined by Full Penetration Corner Welds)



EPRI NDE CENTER

Electric Power Research Institute
Nondestructive Evaluation Center

Leadership in Technology Transfer

September 16, 1996

Tom Fouty
Consumers Power
Palisades Nuclear Plant
27780 Blue Star Memorial Highway
Covert, MI 49043

SUBJECT: Summary Report on Coverage Calculations

Dear Tom,

The attached summary report describes the coverage calculations performed by the EPRI NDE Center on the Palisades steam generator inlet and outlet nozzles. The type of coverage documented for these nozzles was restricted to calculating where the ultrasound beam interrogated the examination volume.

If you have any comments please call me at (704) 547-6130.

Sincerely,

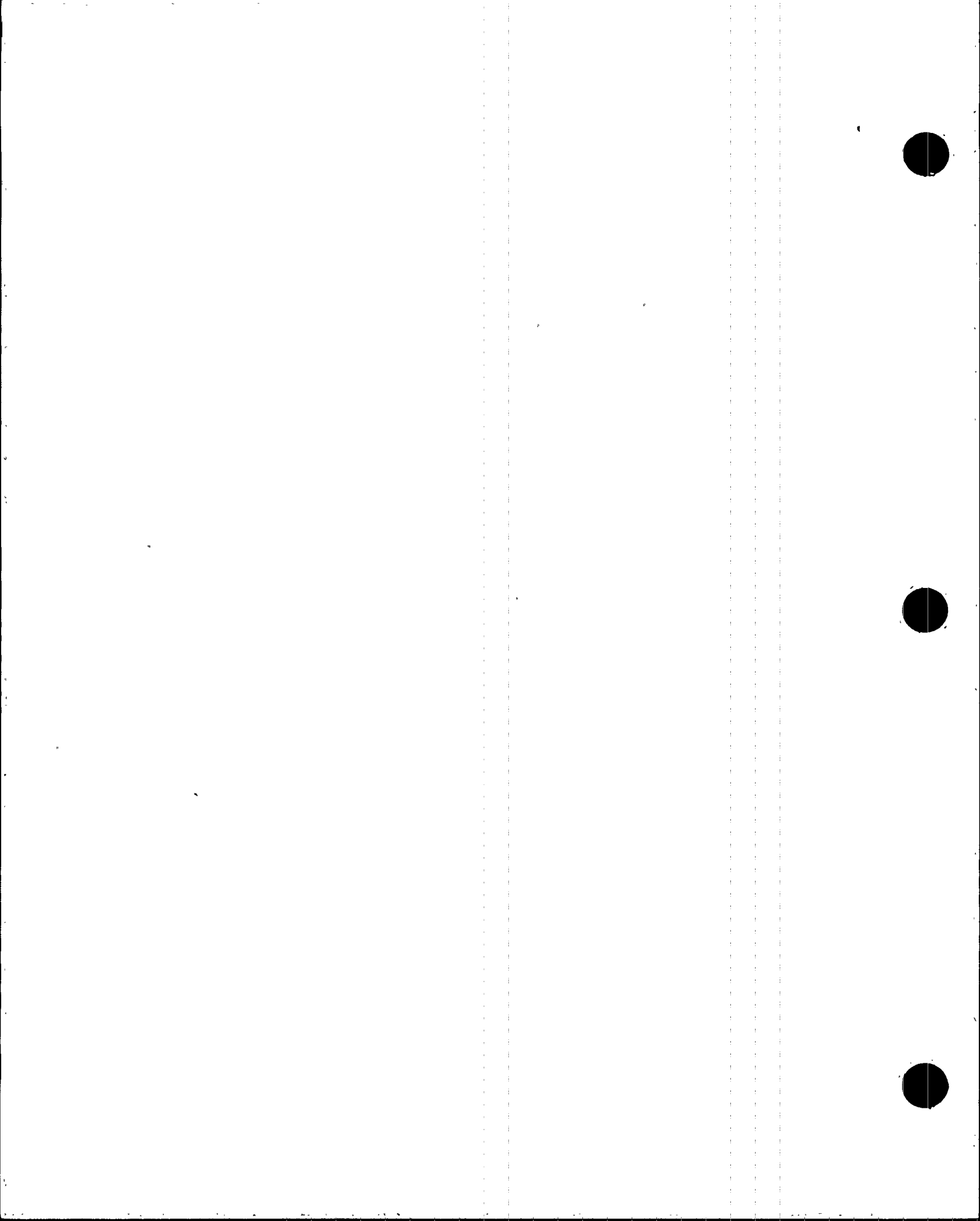


Douglas E. MacDonald
Principal Engineer
EPRI NDE Center

DM/ks
Enc.

cc: Kim Kietzman
Larry Becker
Frank Ammirato

Judy Ford/CP



Palisades Steam Generator Inlet and Outlet Nozzle Coverage Calculations

Douglas E. MacDonald

September 5, 1996

Introduction

This report summarizes EPRI NDE Center activities to calculate the coverage obtained on the Palisades steam generator inlet and outlet nozzles using the Consumers Power Company procedure No. NDT-UT-12, Revision 4, Issued 11/21/95. The type of coverage documented for these nozzles was restricted to calculating where the ultrasound beam interrogated the ASME code examination volume.

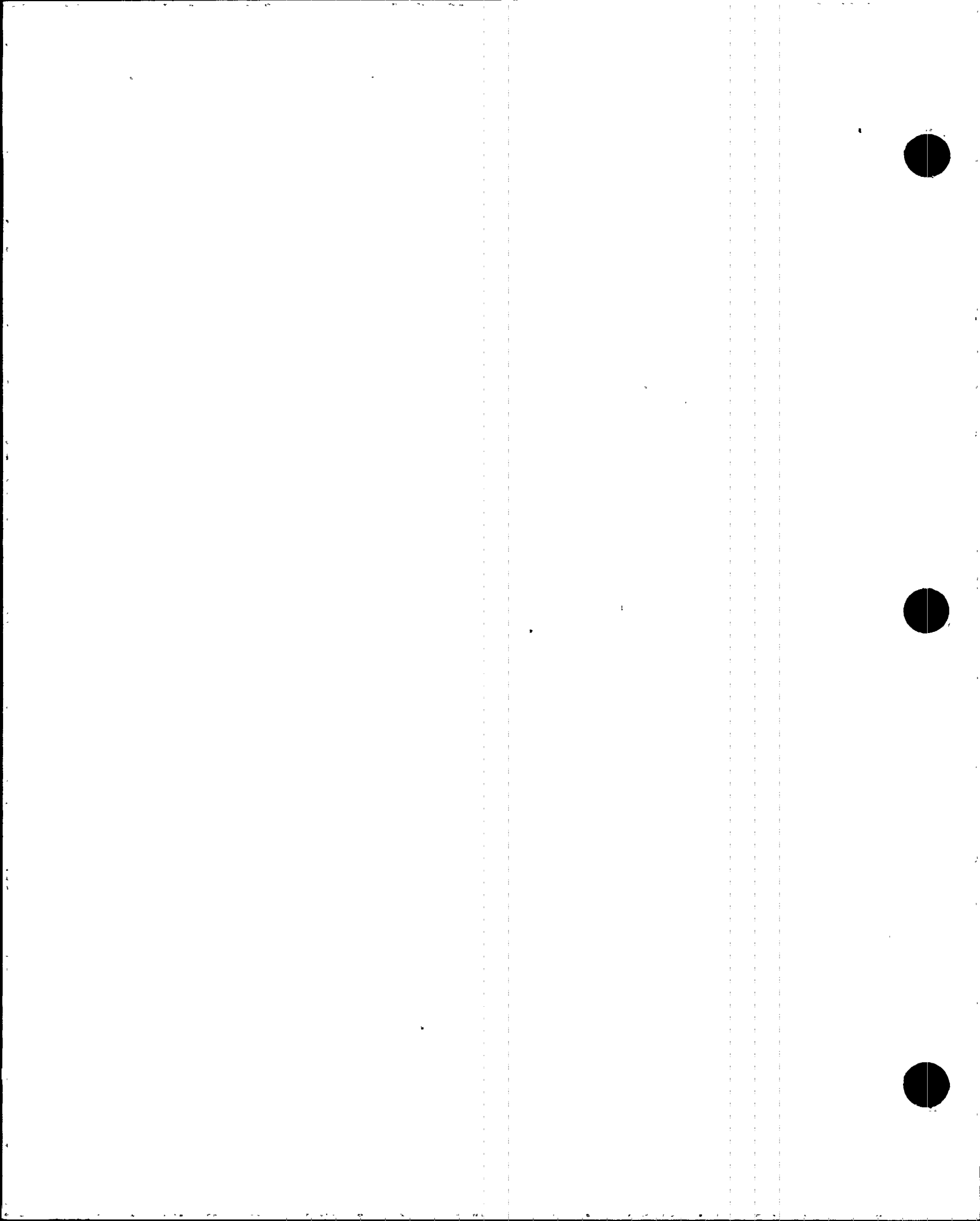
Figure 1 defines the ASME code examination volumes, both nozzle inner radius (M-N-O-P) and nozzle-to-head weld (A-B-C-D-E-F-G-H-I) for the Palisades steam generator inlet and outlet nozzles.

Palisades Steam Generator Inlet Nozzle

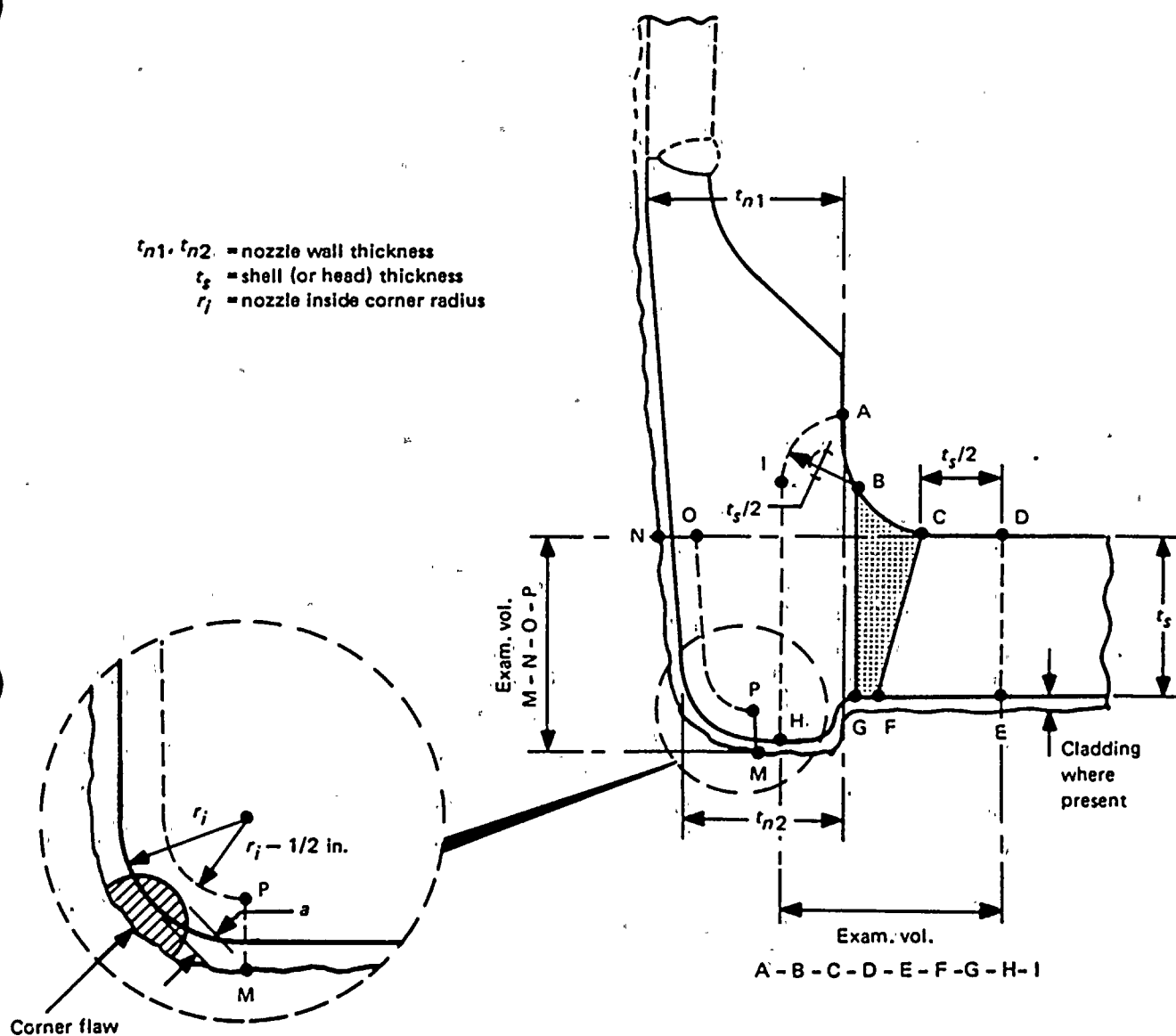
Nozzle Inside Corner Region

Table 1 shows the coverage calculated for a 35° probe, skewed 90° (35°/90°) and scanned on the outer blend radius. (The probe skew convention adopted here has 0° looking at the pipe, 90° looking circumferentially around the nozzle, and 180° looking at the vessel).

Figure 2 shows a cross section of the Palisades steam generator inlet nozzle upon which has been plotted the rays from the 35°/90° probe to the inside surface examination volume. As can be seen in Figure 2, the entire exam volume is covered by the 35°/90° probe scanned on the outer blend radius.



t_{n1} , t_{n2} = nozzle wall thickness
 t_s = shell (or head) thickness
 r_i = nozzle inside corner radius



EXAMINATION REGION [Note (1)]

Shell (or head) adjoining region
 Attachment weld region
 Nozzle cylinder region
 Nozzle inside corner region

EXAMINATION VOLUME [Note (2)]

C-D-E-F
 B-C-F-G
 A-B-G-H-I
 M-N-O-P

NOTES:

- (1) Examination regions are identified for the purpose of differentiating the acceptance standards in IWB-3512.
- (2) Examination volumes may be determined either by direct measurements on the component or by measurements based on design drawings.

NOZZLE IN SHELL OR HEAD
 (Examination Zones in Barrel Type Nozzles Joined by Full Penetration Corner Welds)

Figure 1

Table 1. Coverage Table: SG Inlet; 35°/90° (blend)

Probe Angle	35°
Probe Skew	90°
Probe Location	Blend*
Percentage of Examination Volume (M-N-O-P) Covered	100%
*Contoured Wedge	

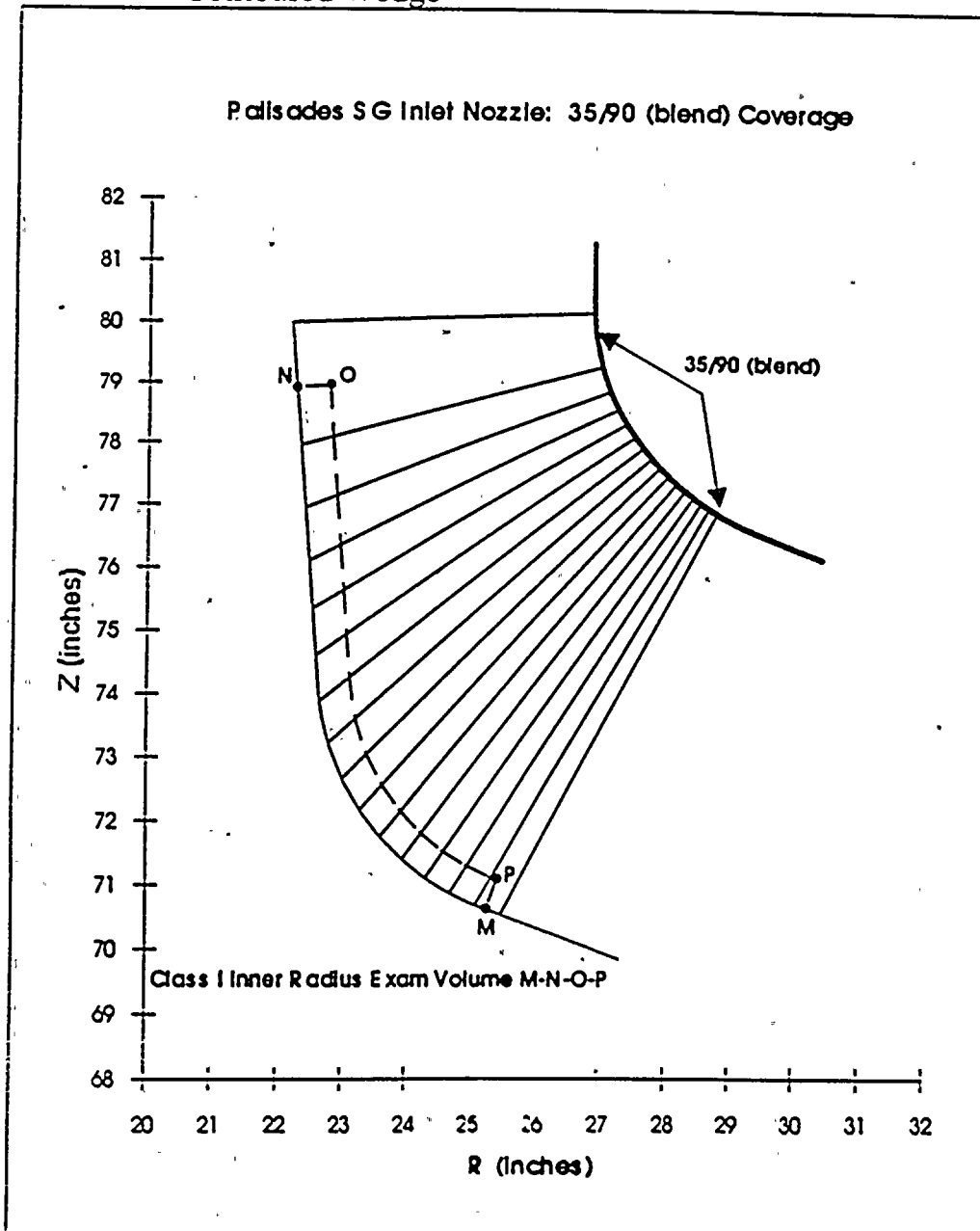


Figure 2. Palisades SG Inlet Nozzle: 35°/90° (blend) Coverage.

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Figure 2 shows a cross section of the Palisades steam generator inlet nozzle upon which has been plotted the rays from the 35°/90° probe to the inside surface examination volume. As can be seen in Figure 2, the entire exam volume is covered by the 35°/90° probe scanned on the outer blend radius.

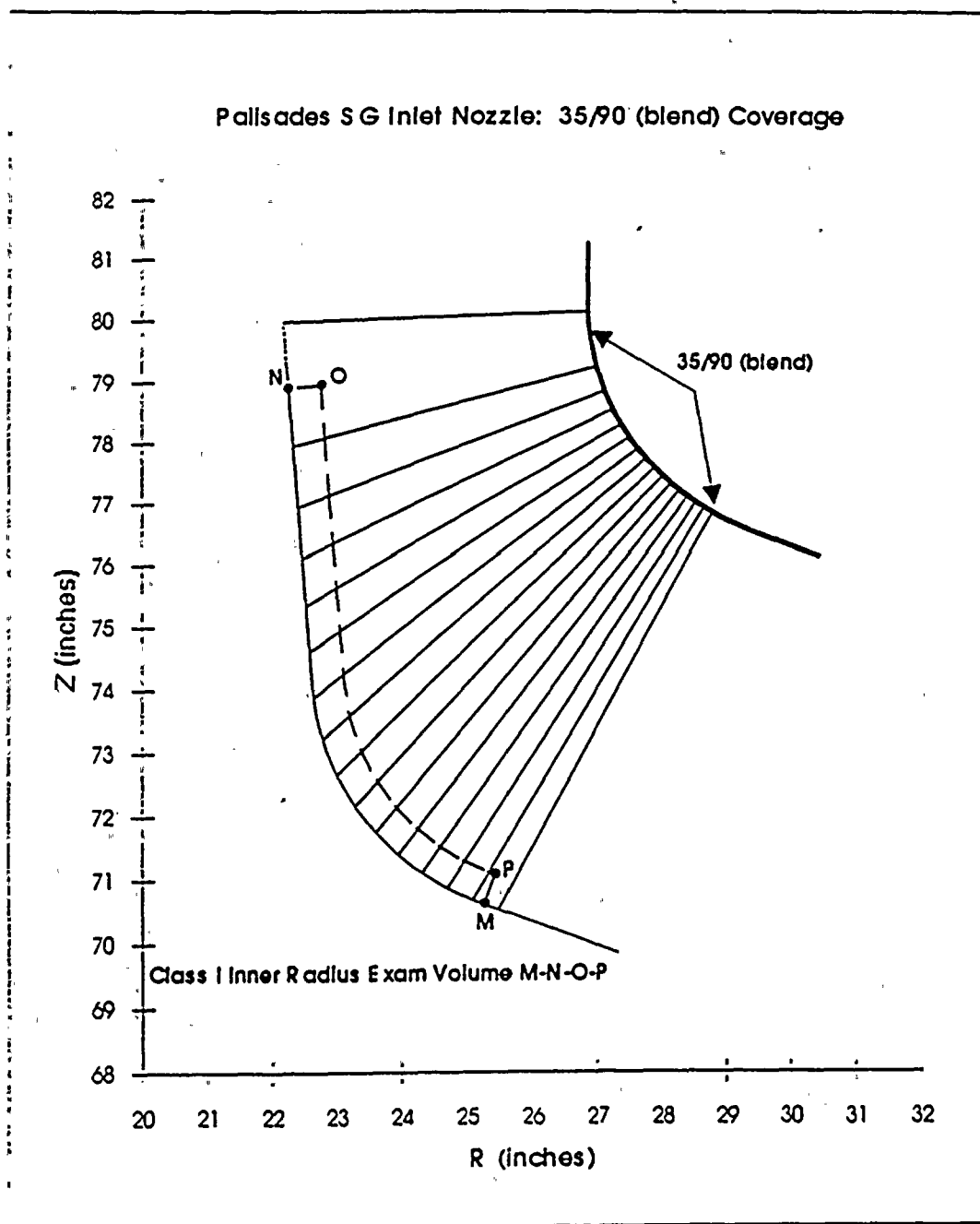
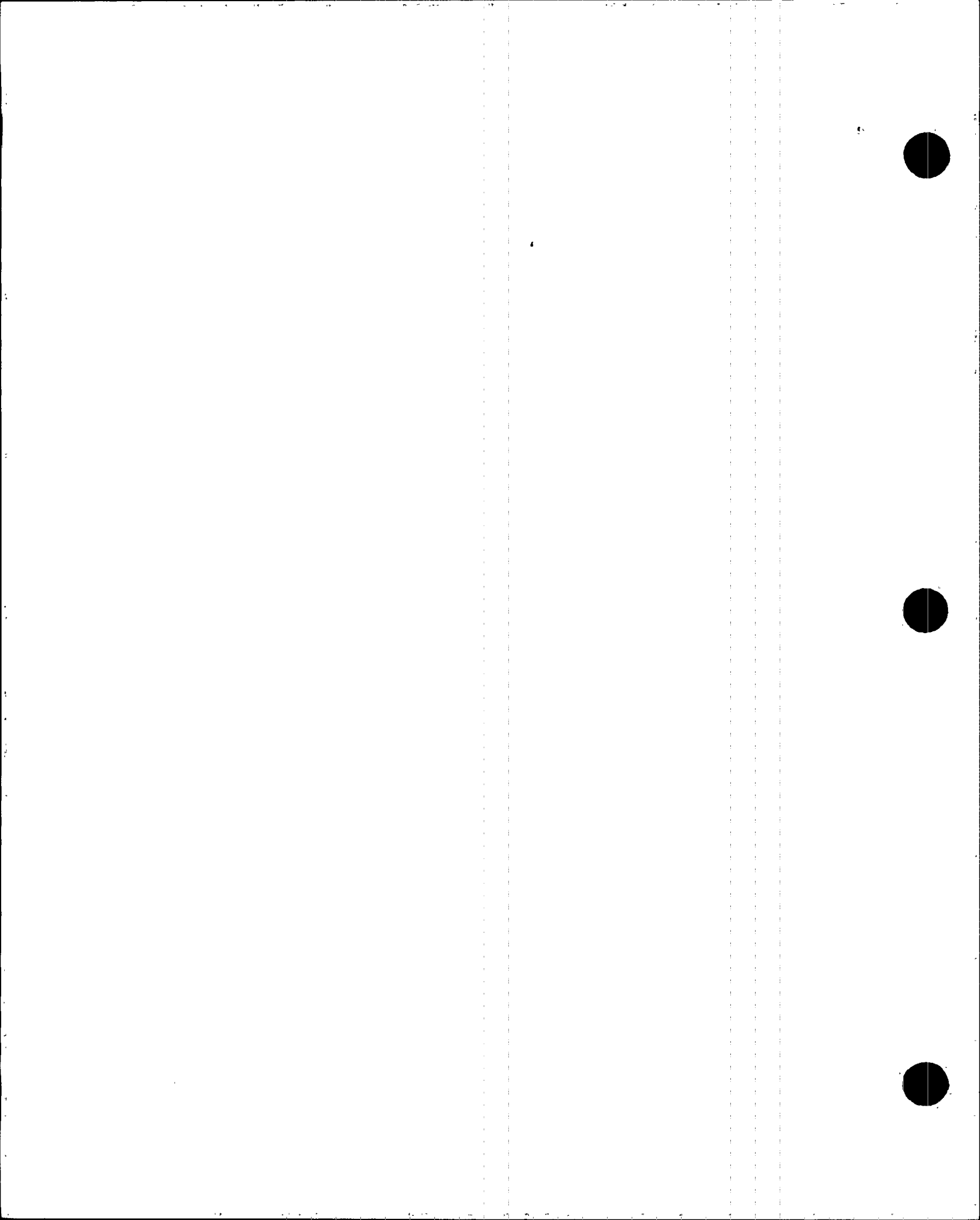


Figure 2. Palisades SG Inlet Nozzle: 35°/90° (blend) Coverage.



Nozzle-to-Head Weld Region

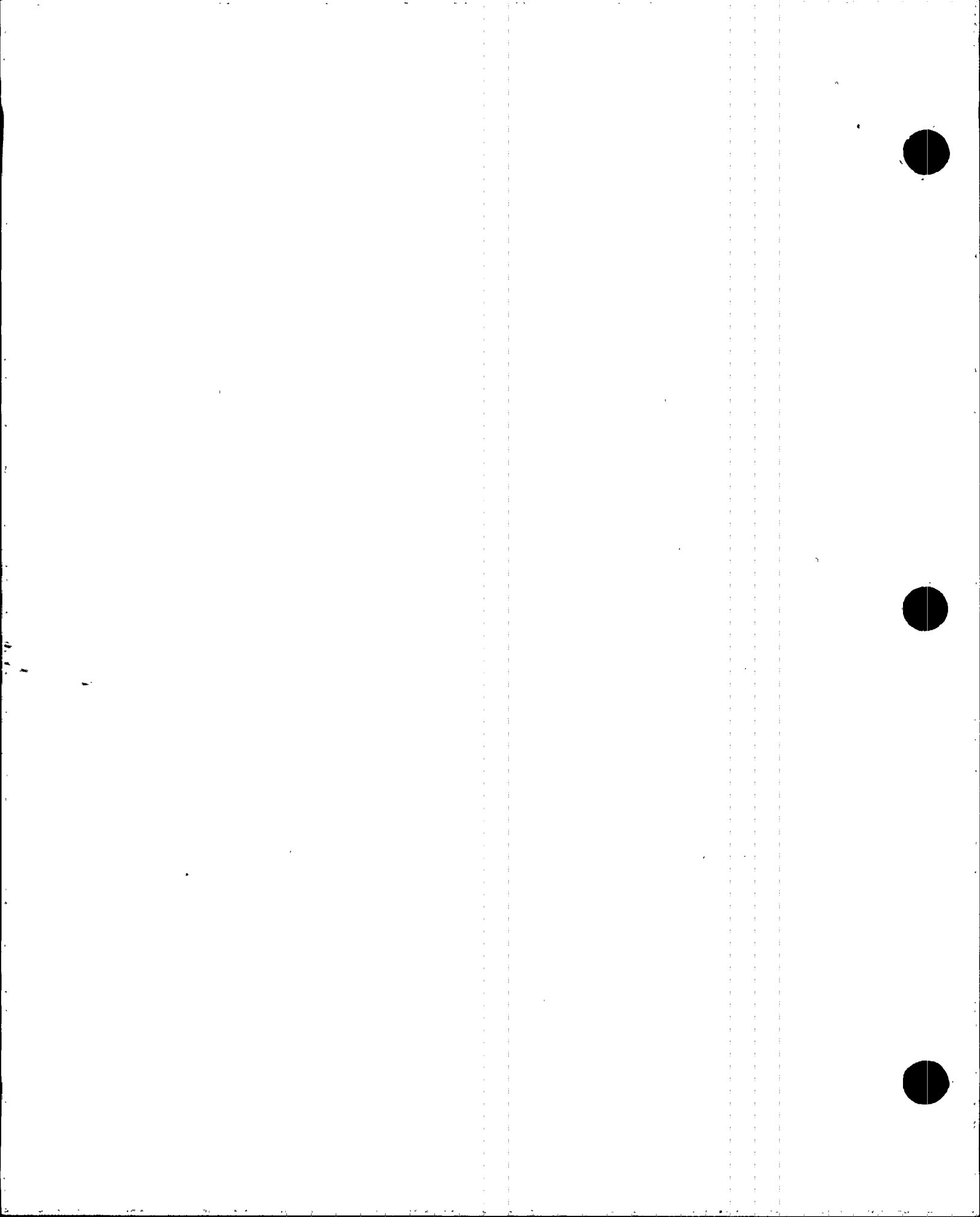
Figure 3 shows a cross section of the Palisades steam generator inlet nozzle which indicates the nozzle-to-head weld examination volume. Table 2 lists the coverage obtained from the axial scans of 45° and 60° probes scanned on the vessel head and nozzle boss. The percent coverage is listed for the nozzle cylinder region A-B-G-H-I; as well as, the entire weld examination volume A-B-C-D-E-F-G-H-I (See Figures 1 and 3).

Table 2. Coverage Table: SG Inlet; 45° and 60° probes scanned axially on vessel head and nozzle boss.

Probe Angle	45°	45°	60°	60°
Probe Skew	0°	180°	0°	180°
Probe Location	Head	Boss	Head	Boss
% Exam Vol. (C-D-E-F) Covered	100%	0%	93%	0%
% Exam Vol. (B-C-F-G) Covered	87%	0%	90%	0%
% Exam Vol. (A-B-G-H-I) Covered	53%	0%	63%	12%
Percent Total Weld Exam Volume (A-B-C-D-E-F-G-H-I) Covered	79%	0%	81%	5%

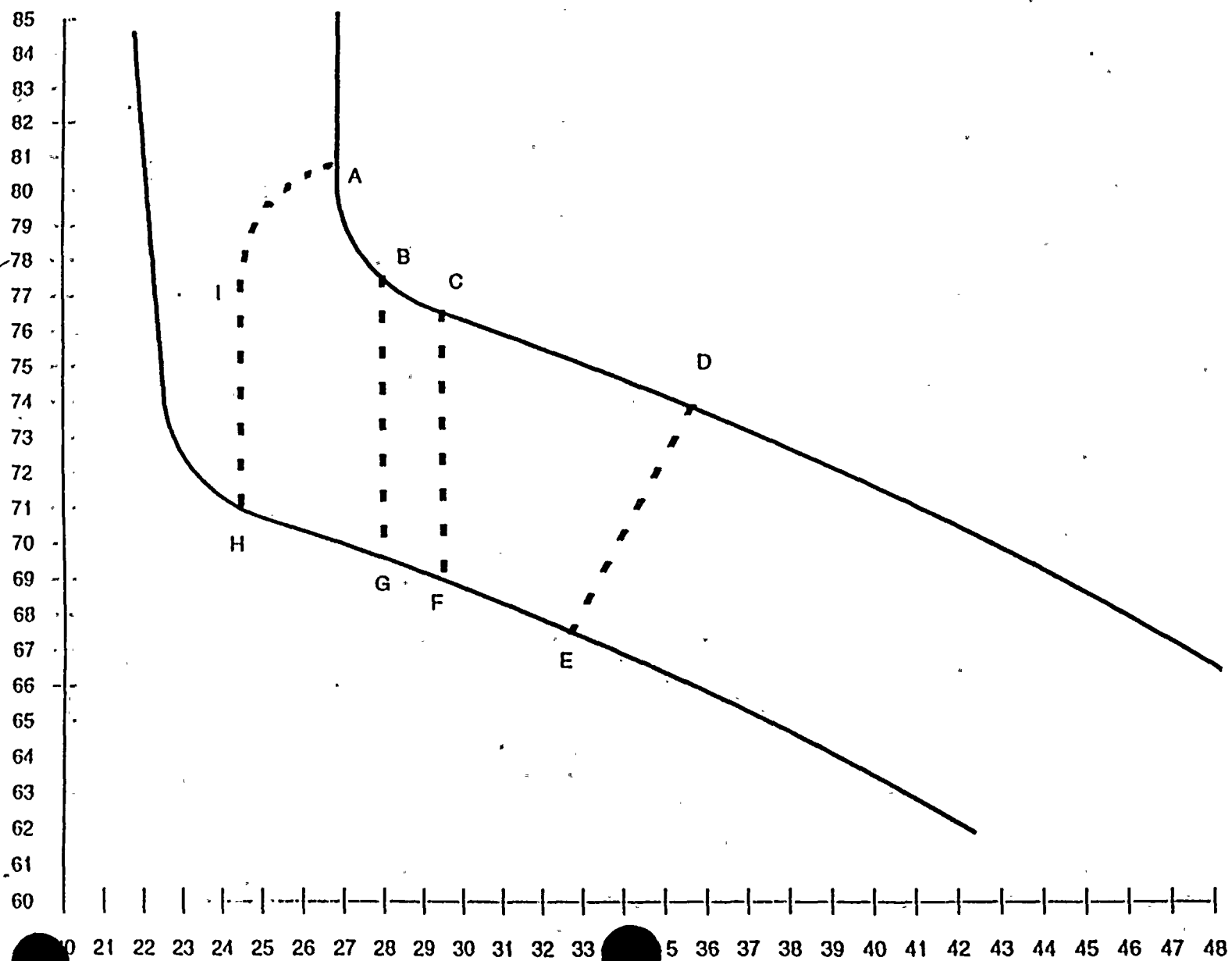
Figures 4 through 7 support the calculated axial scan coverage listed in Table 2. Figure 4 shows a cross section of the Palisades steam generator inlet nozzle upon which has been plotted the rays of the axial scan of the 45°/0°(head scan) probe through the weld examination volume. Figure 5 shows the cross section with the rays of the axial scan of the 45°/180°(boss scan) probe. Figure 6 shows the cross section with the rays of the axial scan of the 60°/0° probe through the weld examination volume. Figure 7 shows the cross section with the rays of the axial scan of the 60°/180° probe. Figure 8 shows the combined coverage achieved by all the axial scans of the nozzle-to-head weld.

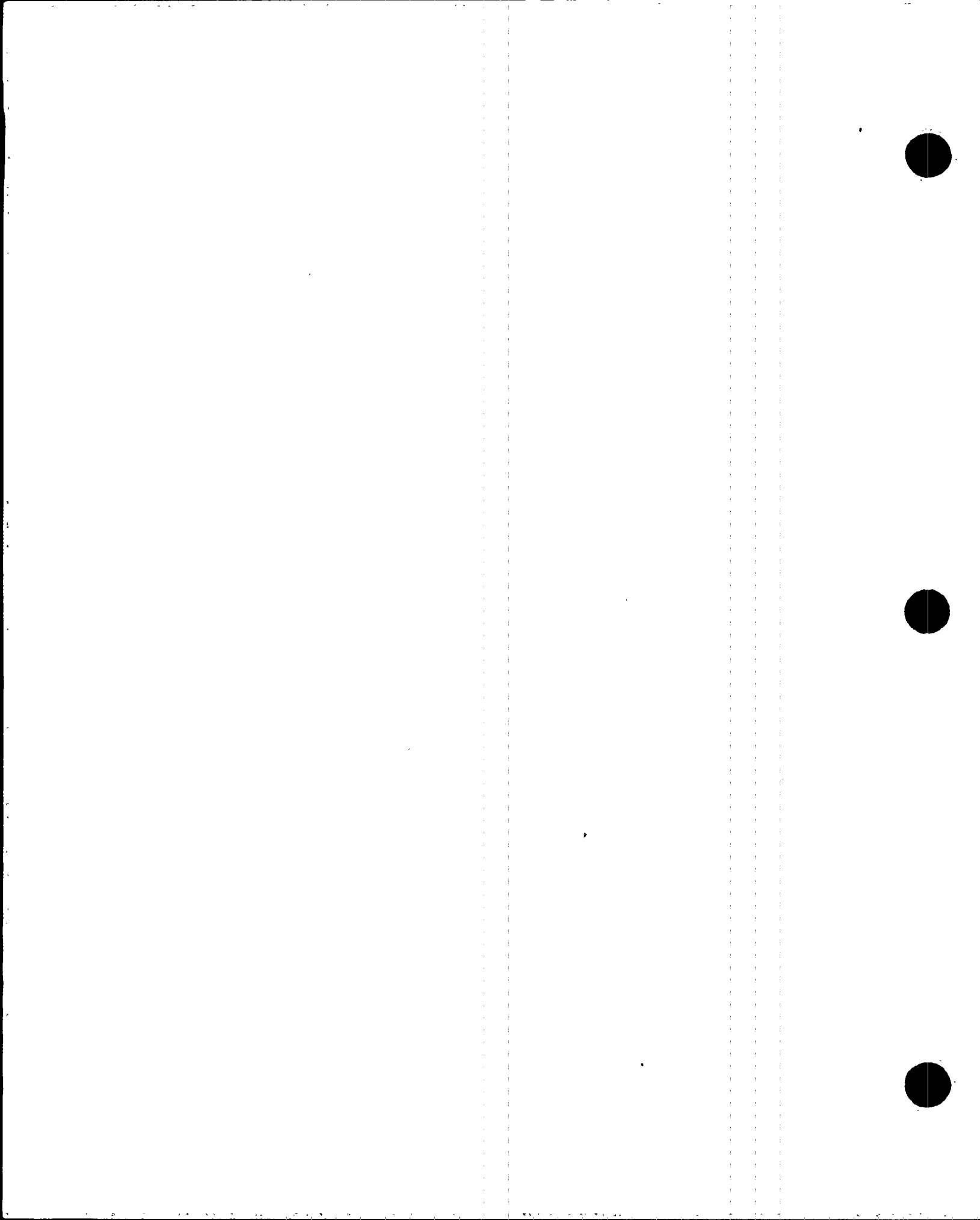
Table 3 lists the coverage obtained from the transverse scans (no probe skewing) of 45° and 60° probes scanned on the vessel head and nozzle boss. Figures 9 through 12 support the calculated transverse scan coverage listed in Table 3.



Examination Volume (CP-SGPIN)

Figure 3





Coverage For Probe Angle=45 Deg; Probe Skew=0 Deg (CP-SGPIN)

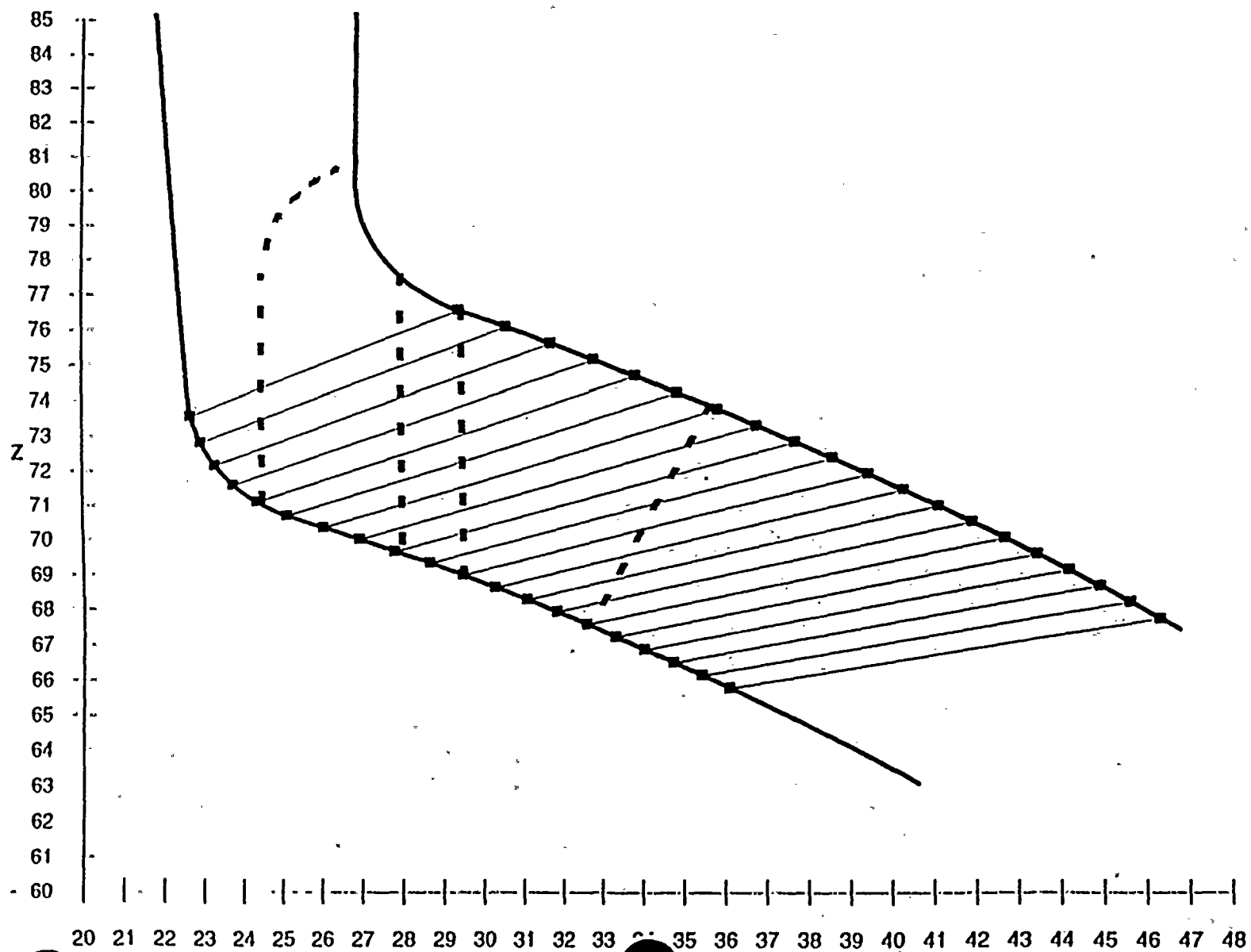
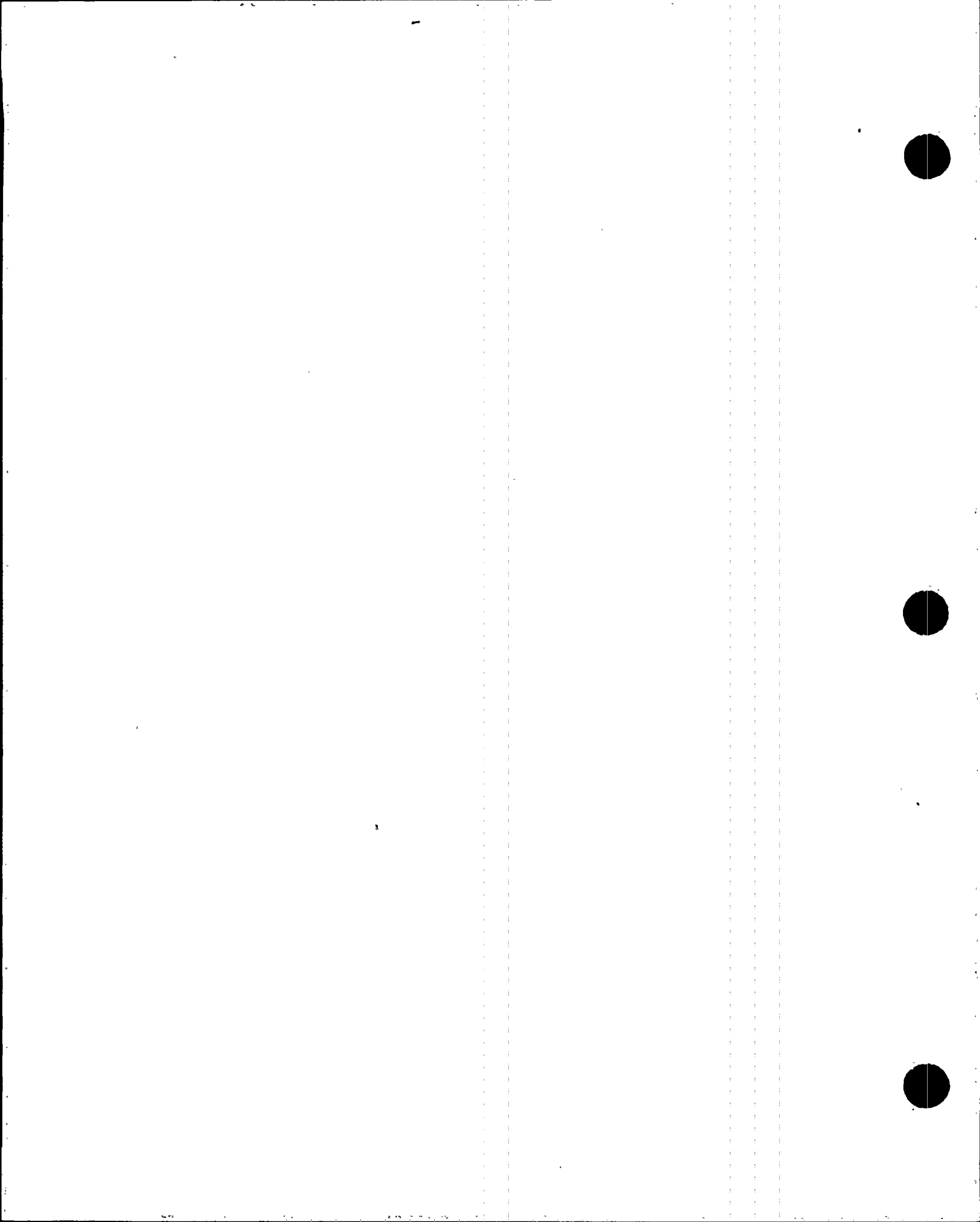


Figure 4



Coverage For Probe Angle=45 Deg; Probe Skew=180 Deg (CP-SGPIN)

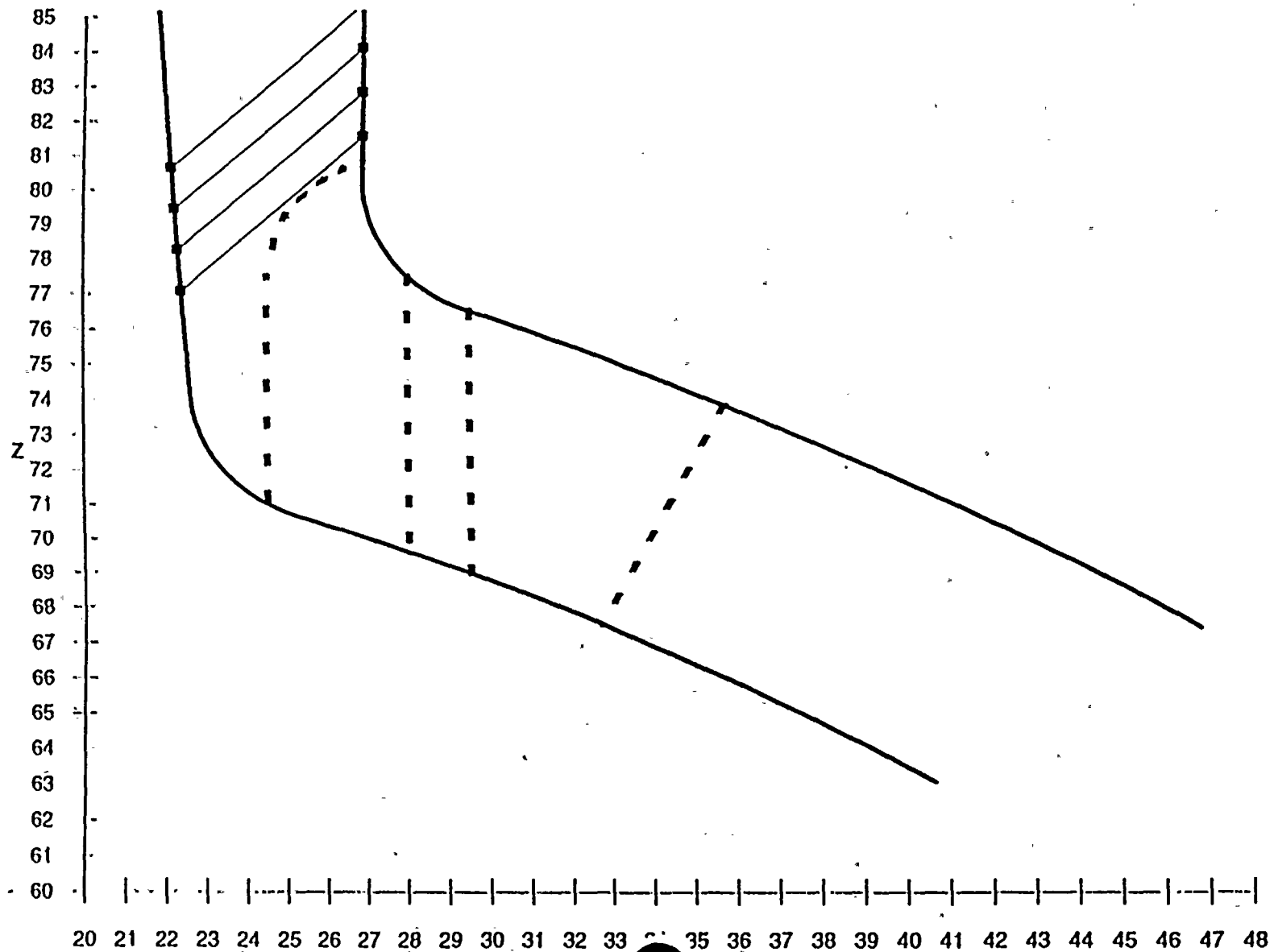


Figure 5



Coverage For Probe Angle=60 Deg; Probe Skew=0 Deg (CP-SGPIN)

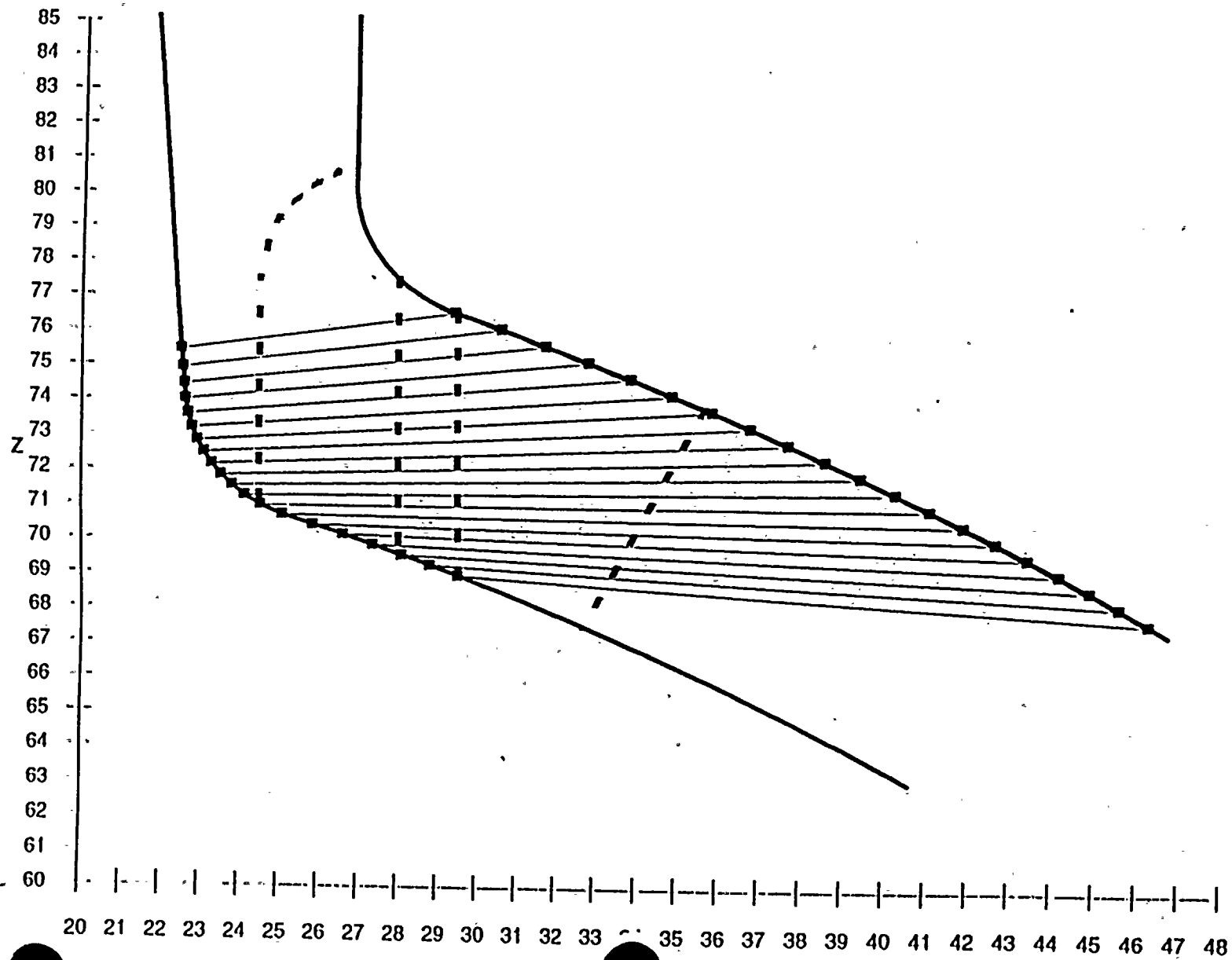
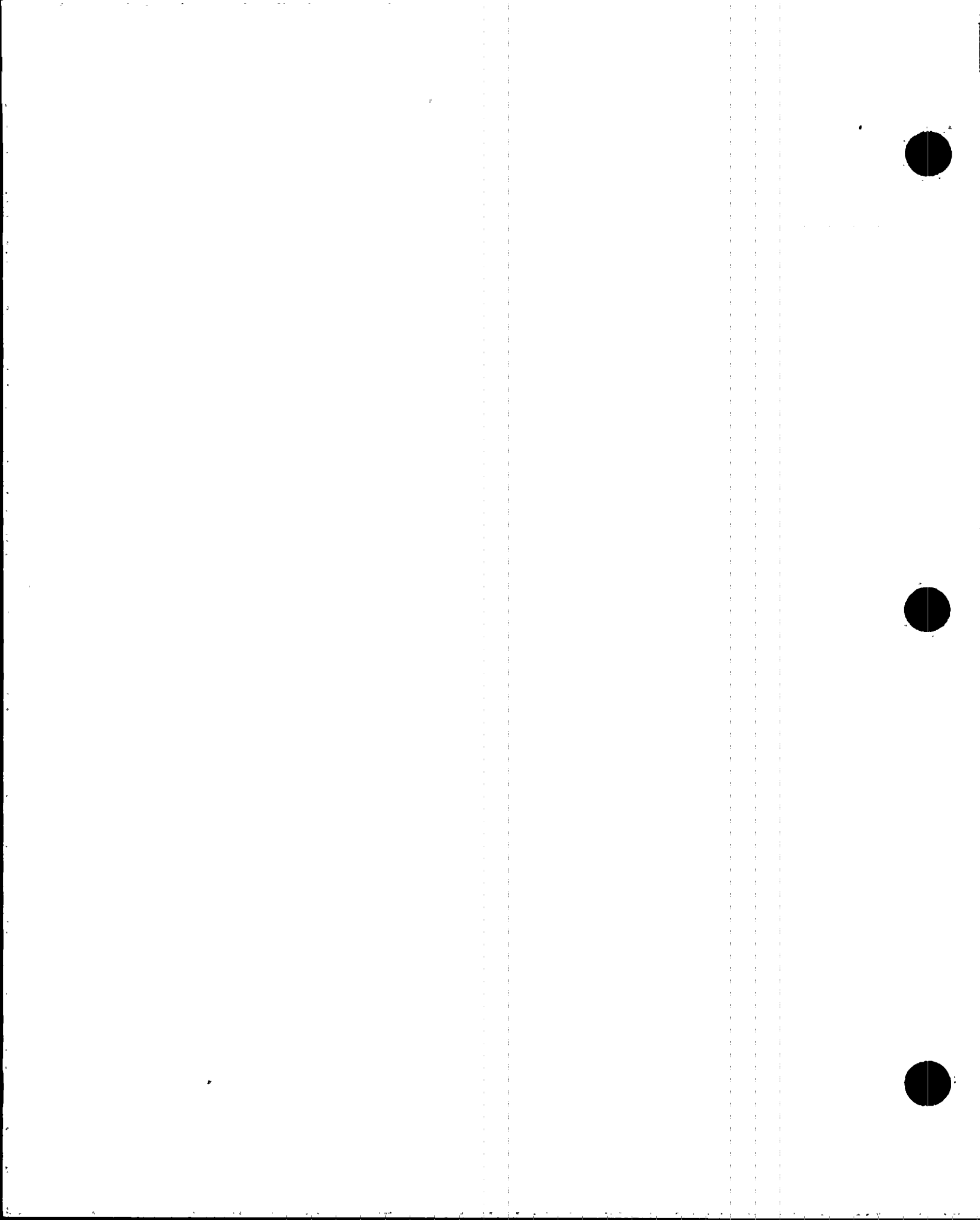


Figure 6



Coverage For Probe Angle=60 Deg; Probe Skew=180 Deg (CP-SGPIN)

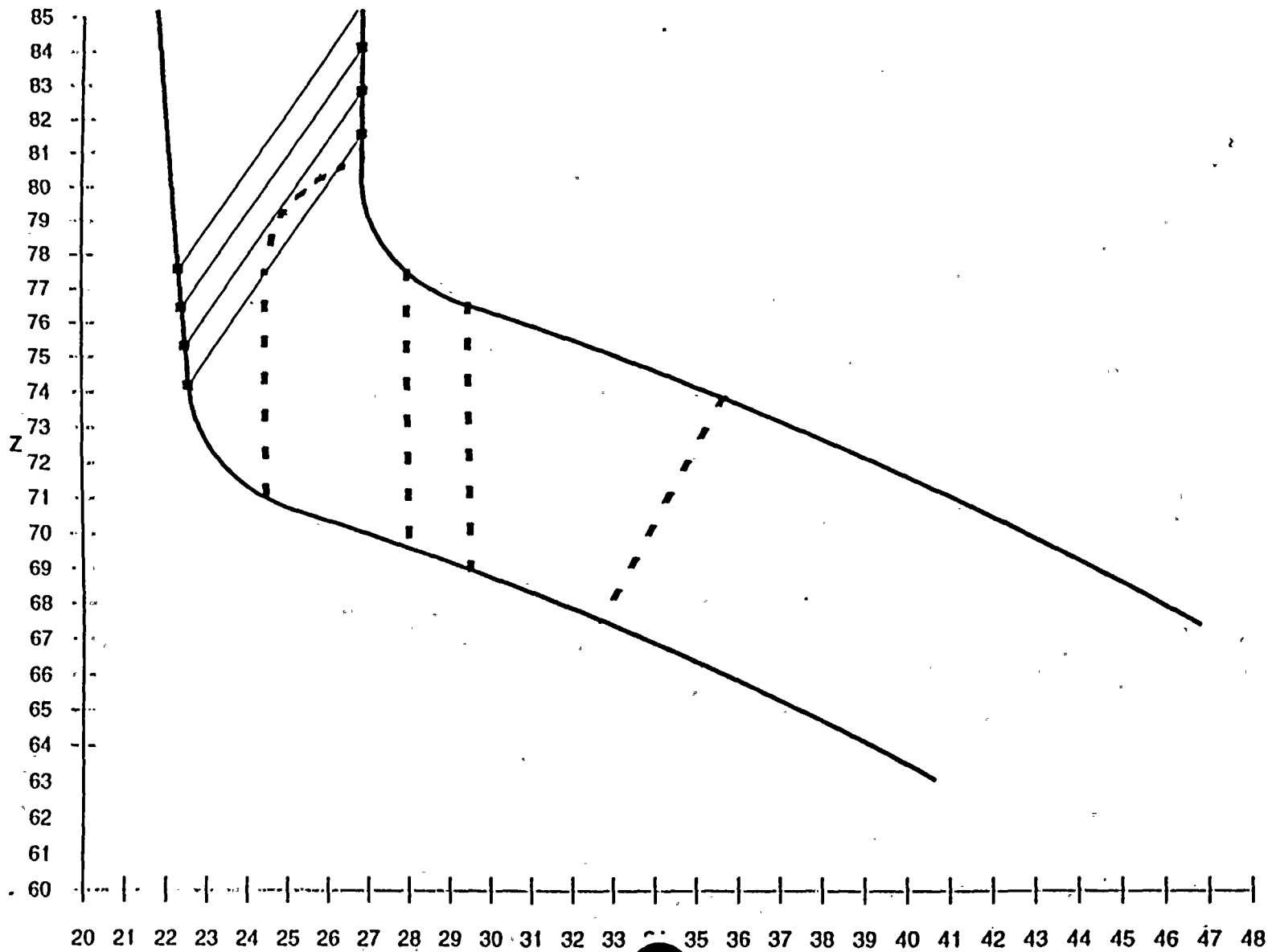
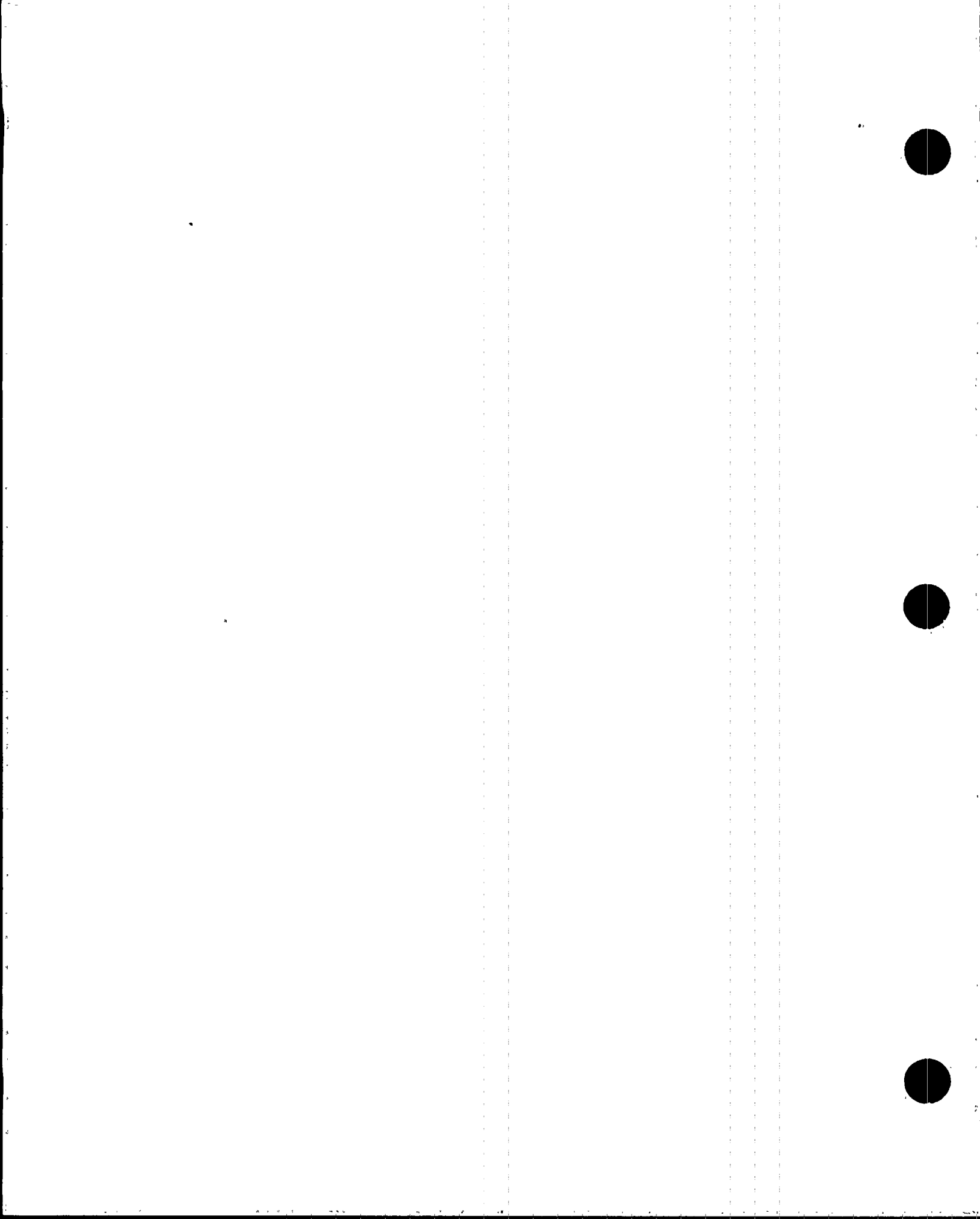


Figure 7



Combined Coverage (CP-SGPIN)

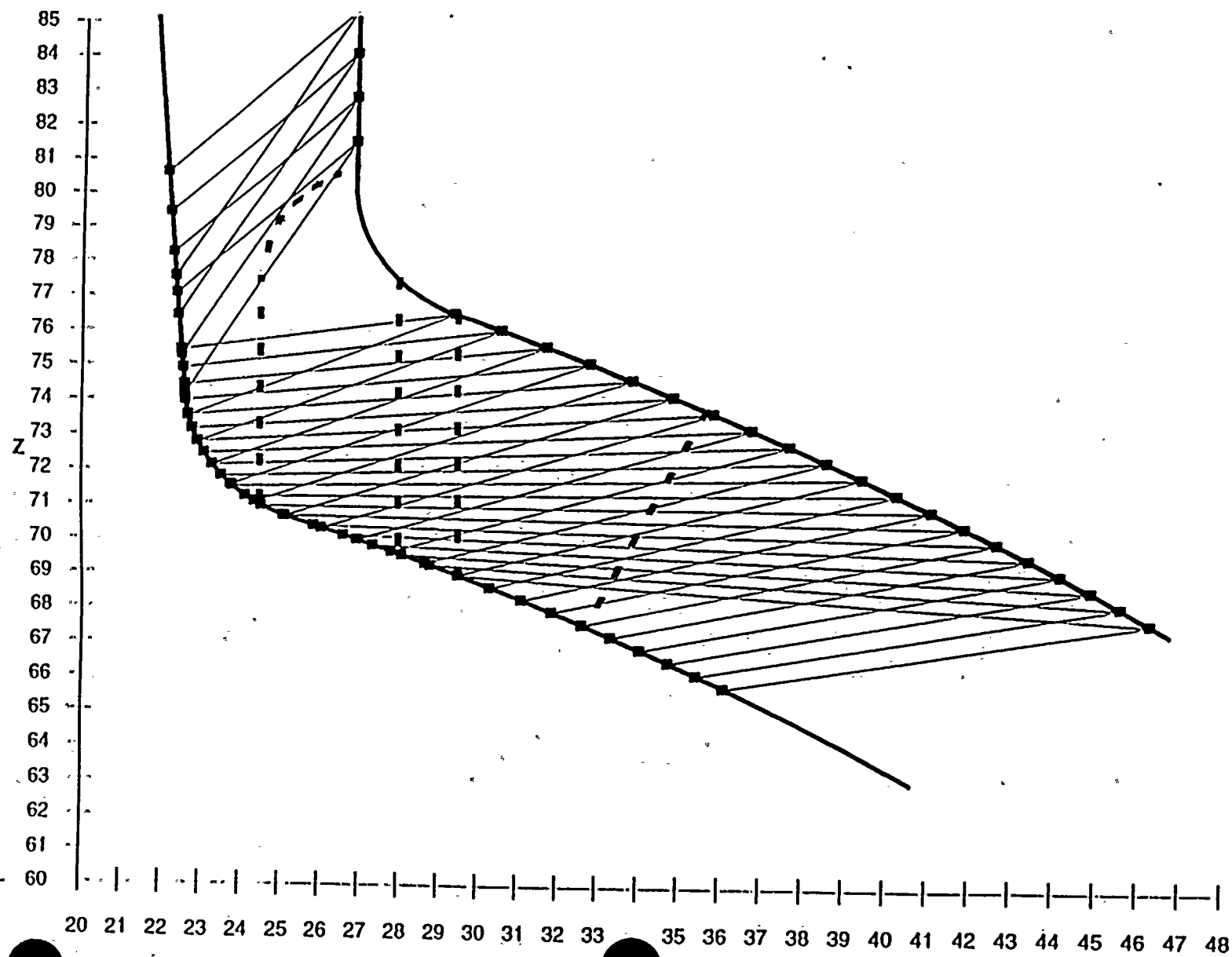


Figure 8

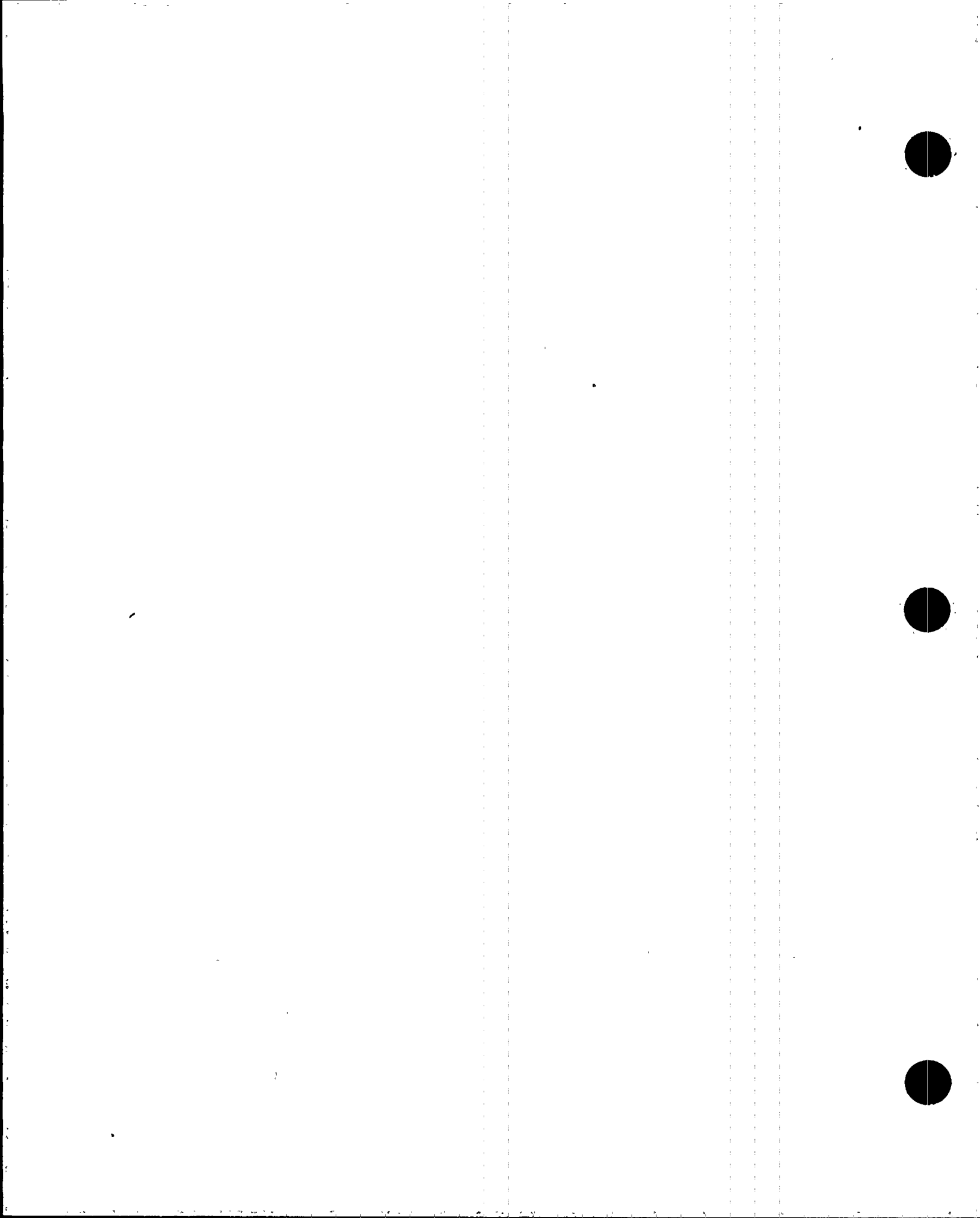


Table 3. Coverage Table: SG Inlet; 45° and 60° probes scanned transversely on vessel head and nozzle boss (no probe skewing).

Probe Angle	45°	45°	60°	60°
Probe Skew	90°	90°	90°	90°
Probe Location	Head	Boss	Head	Boss
% Exam Vol. (C-D-E-F) Covered	100%	0%	92%	0%
% Exam Vol. (B-C-F-G) Covered	58%	0%	0%	0%
% Exam Vol. (A-B-G-H-I) Covered	0%	0%	0%	0%
Percent Total Weld Exam Volume (A-B-C-D-E-F-G-H-I) Covered	54%	0%	42%	0%

Figure 9 shows a cross section of the Palisades steam generator inlet nozzle upon which has been plotted the rays of the transverse scan of the 45° probe from the head through the weld examination volume with no probe skewing. Figure 10 shows the cross section with the rays of the transverse scan of the 45° probe from the boss. Figure 11 shows the cross section with the rays of the transverse scan of the 60° probe from the head through the weld examination volume. Figure 12 shows the cross section with the rays of the transverse scan of the 60° probe from the boss. Figure 13 shows the combined coverage achieved by all the transverse scans of the nozzle-to-head weld with no probe skewing.

Table 4 lists the coverage obtained from the transverse scans ($\pm 20^\circ$ probe skewing) of 45° and 60° probes scanned on the vessel head and nozzle boss. Figures 14 through 17 support the calculated transverse scan coverage listed in Table 4. Figure 14 shows a cross section of the Palisades steam generator inlet nozzle upon which has been plotted the rays of the transverse scan of the 45° probe from the head through the weld examination volume with $\pm 20^\circ$ probe skewing. Figure 15 shows the cross section with the rays of the transverse scan of the 45° probe from the boss. Figure 16 shows the cross section with the rays of the transverse scan of the 60° probe from the head through the weld examination volume. Figure 17 shows the cross section with the rays of the transverse scan of the 60° probe from the boss. Figure 18 shows the combined coverage achieved by all the transverse scans of the nozzle-to-head weld with $\pm 20^\circ$ probe skewing.

Coverage For Probe Angle=45 Deg; Probe Skew=90 Deg (CP-SGPIN)

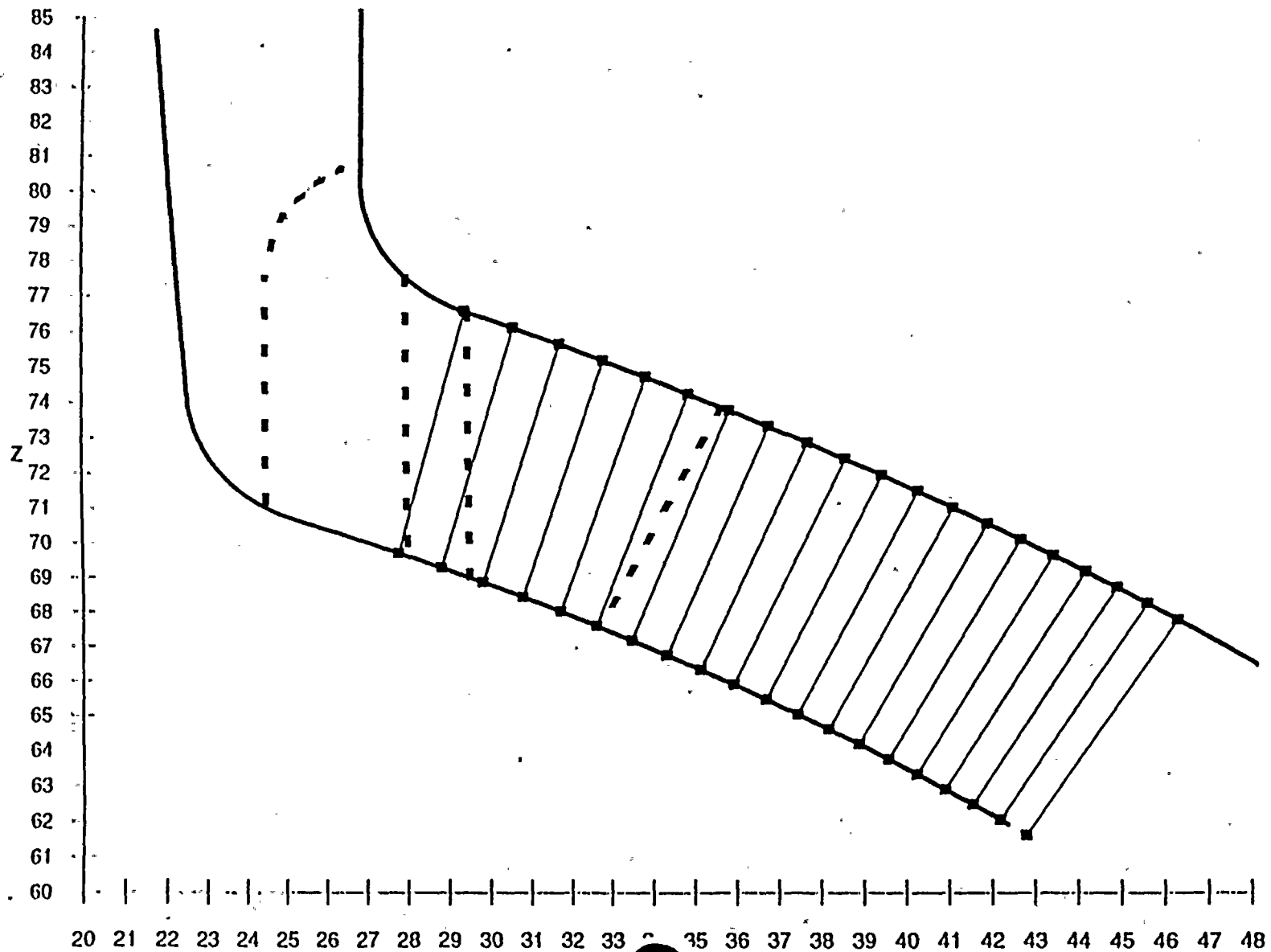
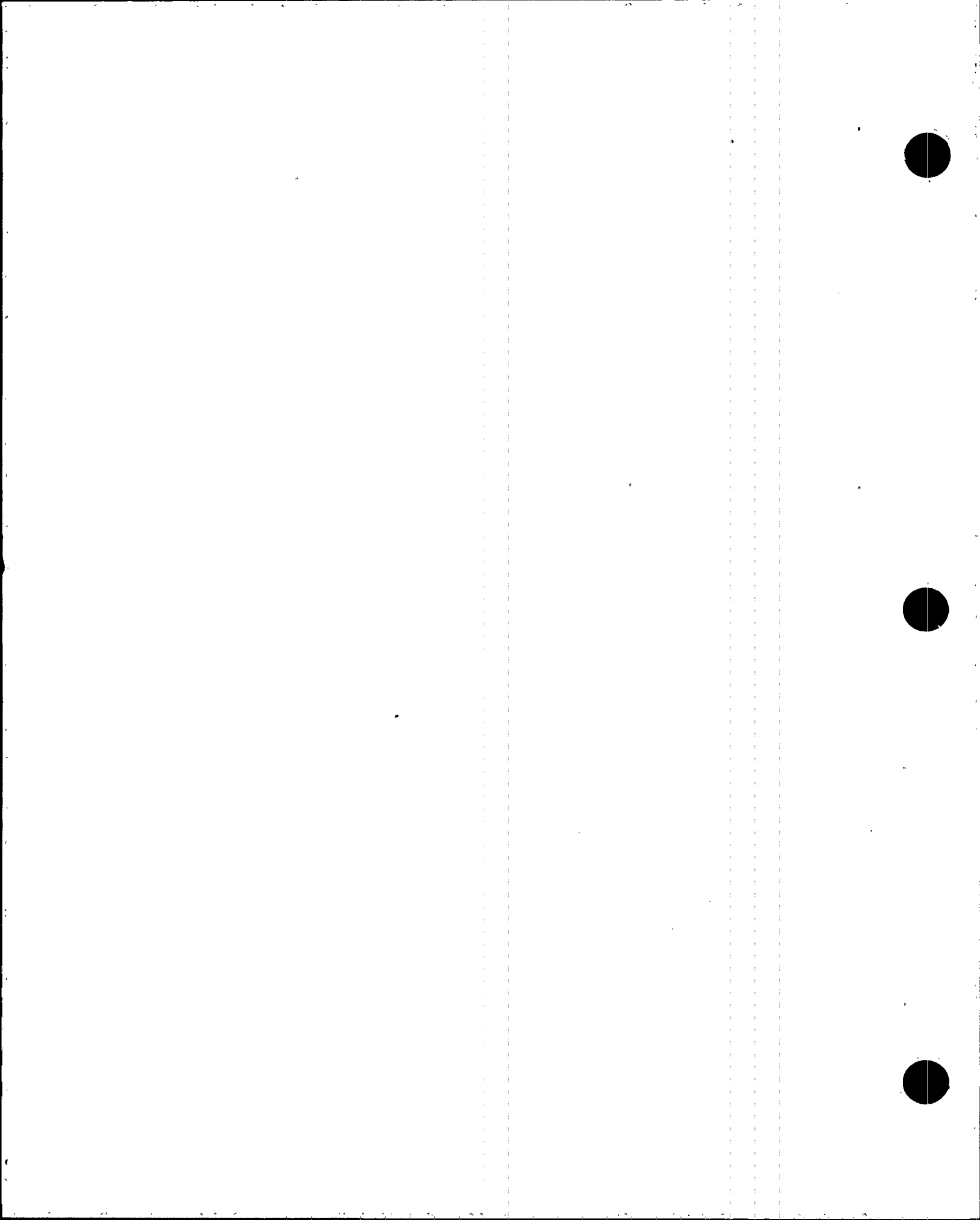


Figure 9



Coverage For Probe Angle=45 Deg; Probe Skew=90 Deg (CP-SGPIN)

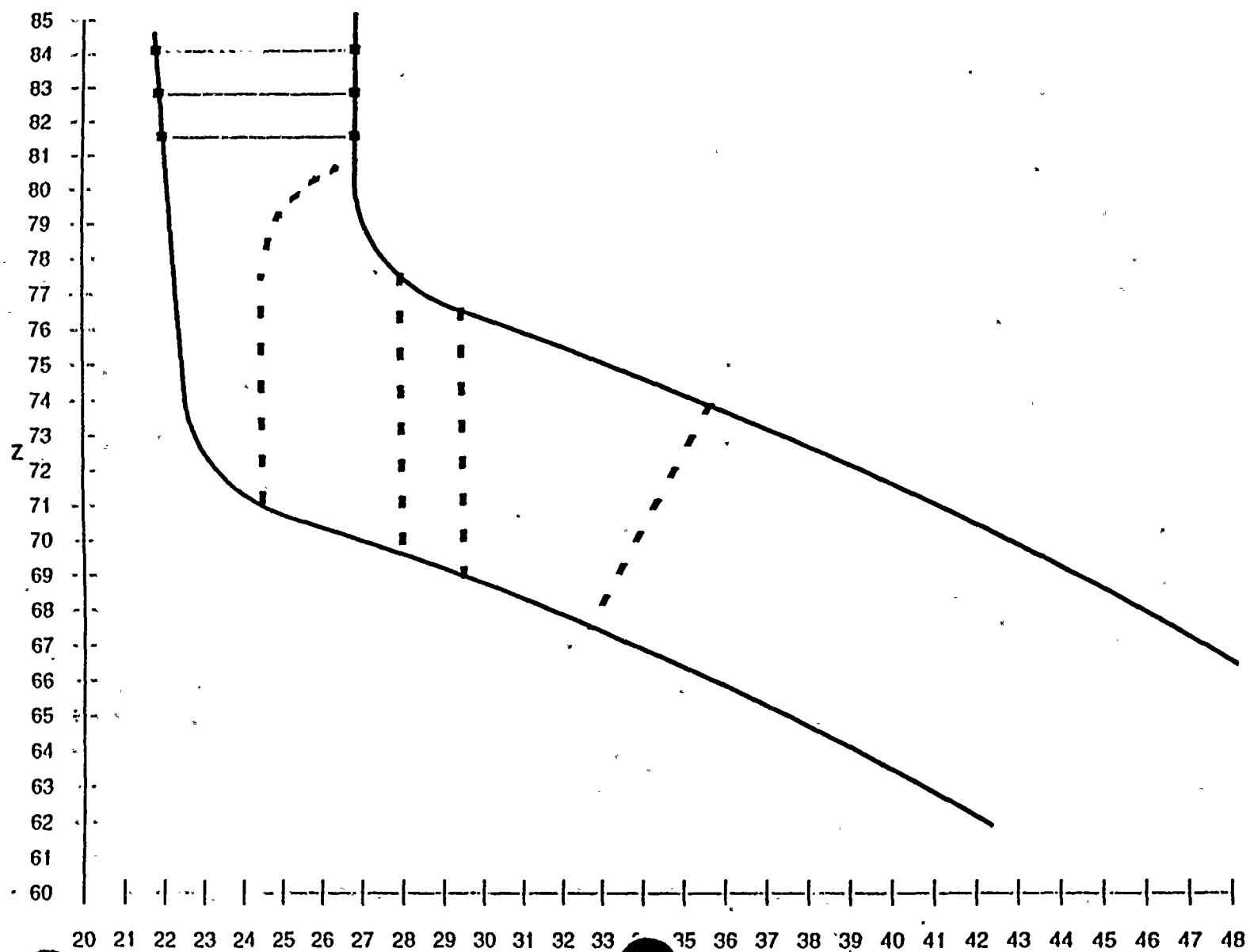
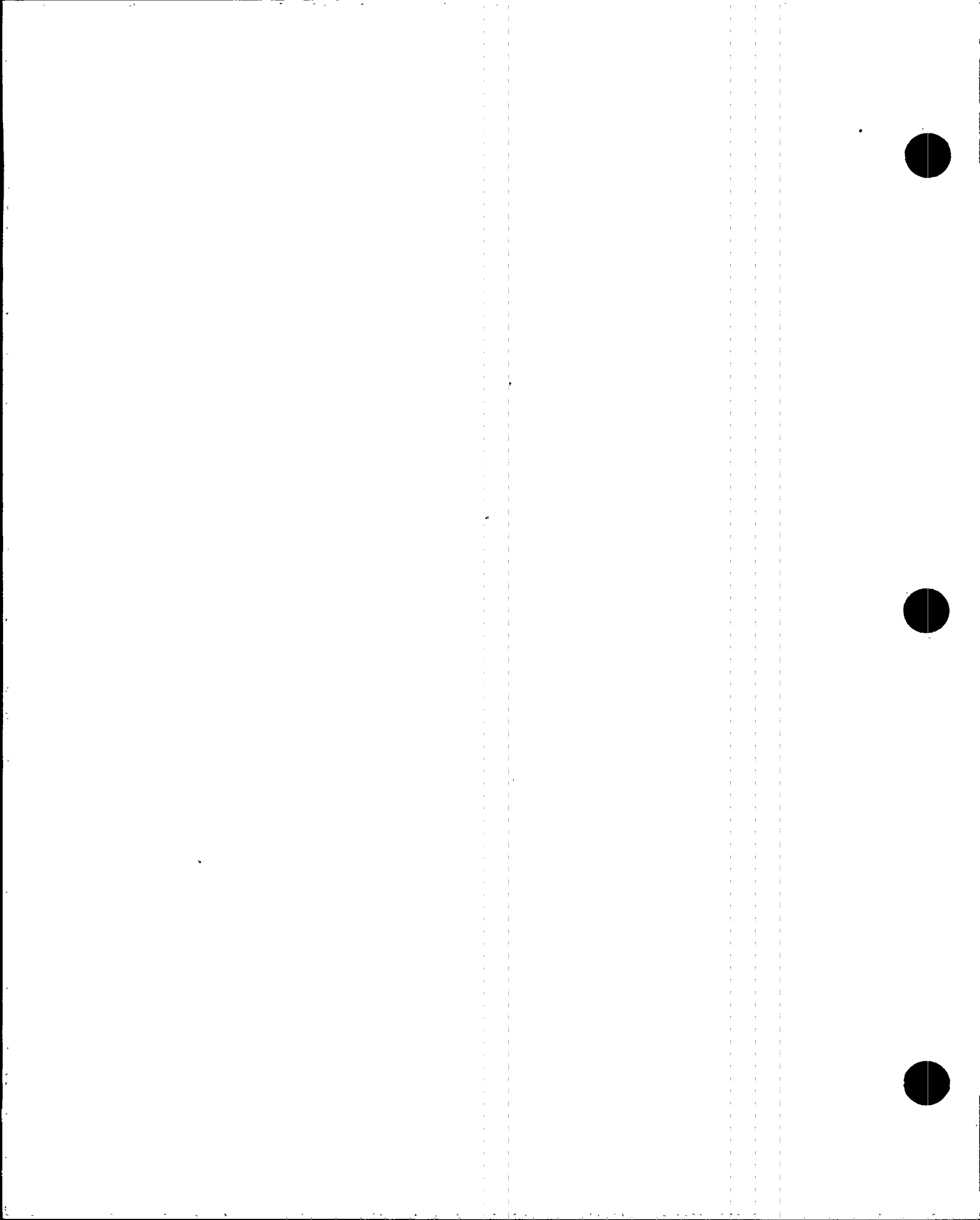


Figure 10



Coverage For Probe Angle=60 Deg; Probe Skew=90 Deg (CP-SGPIN)

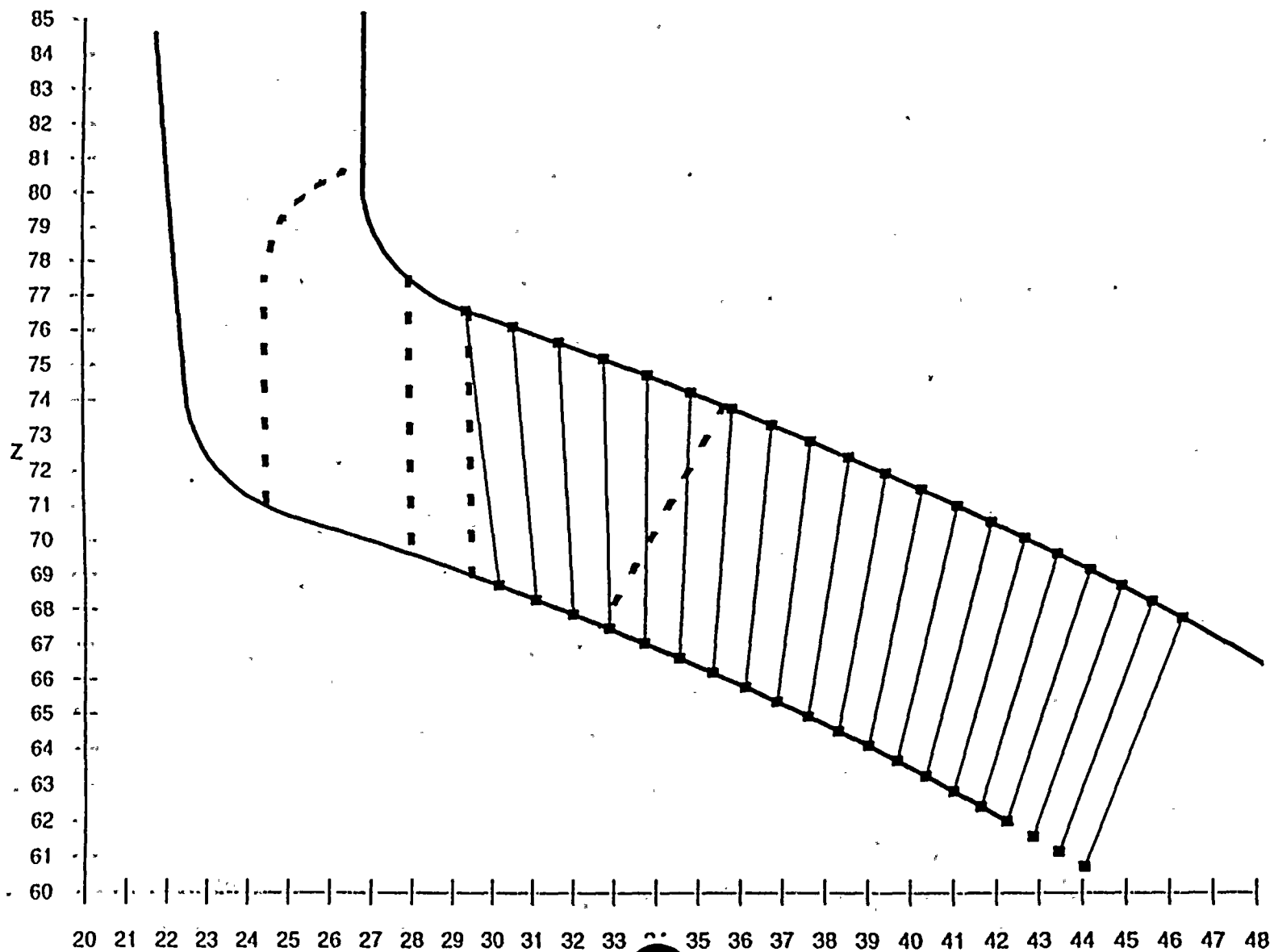
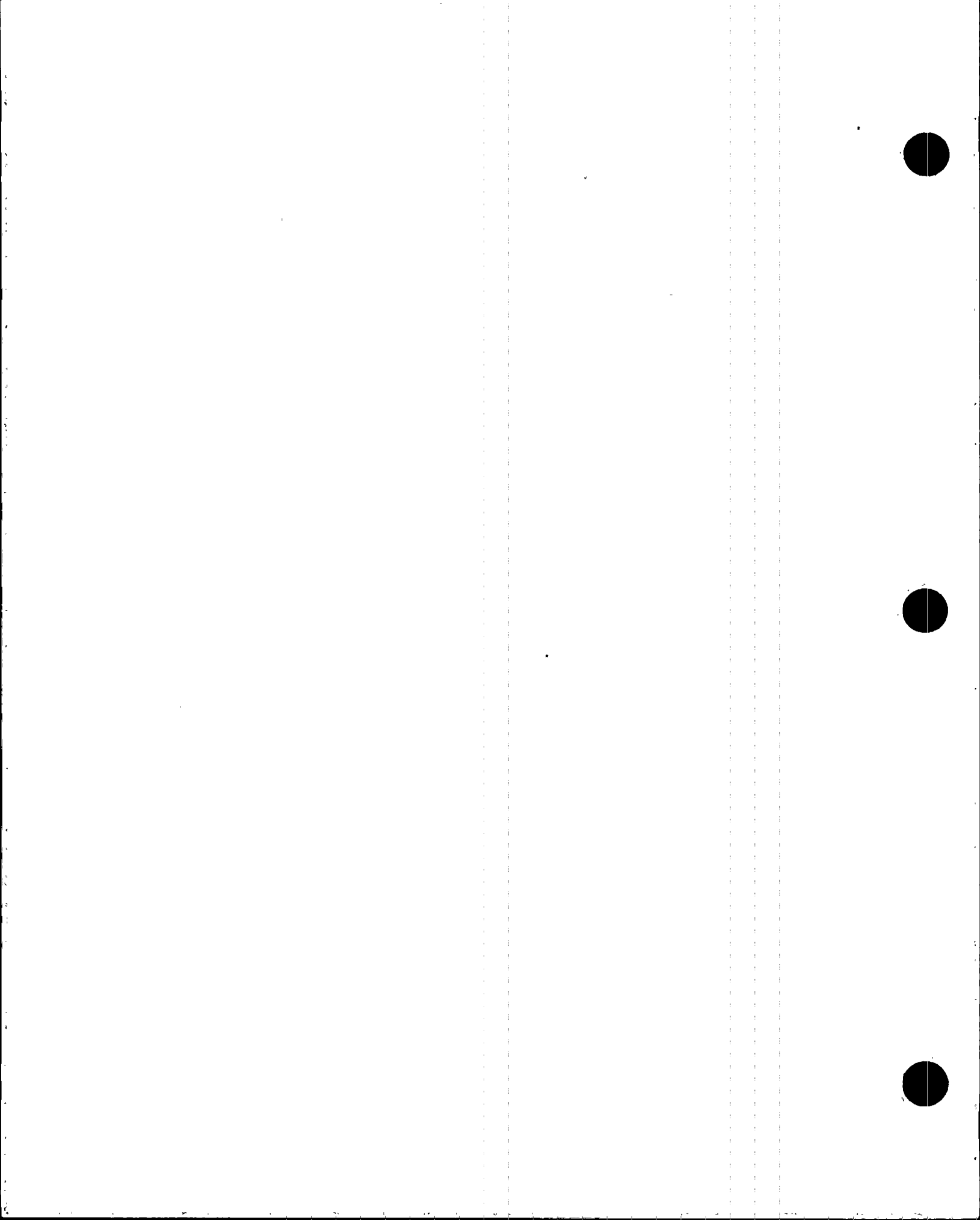
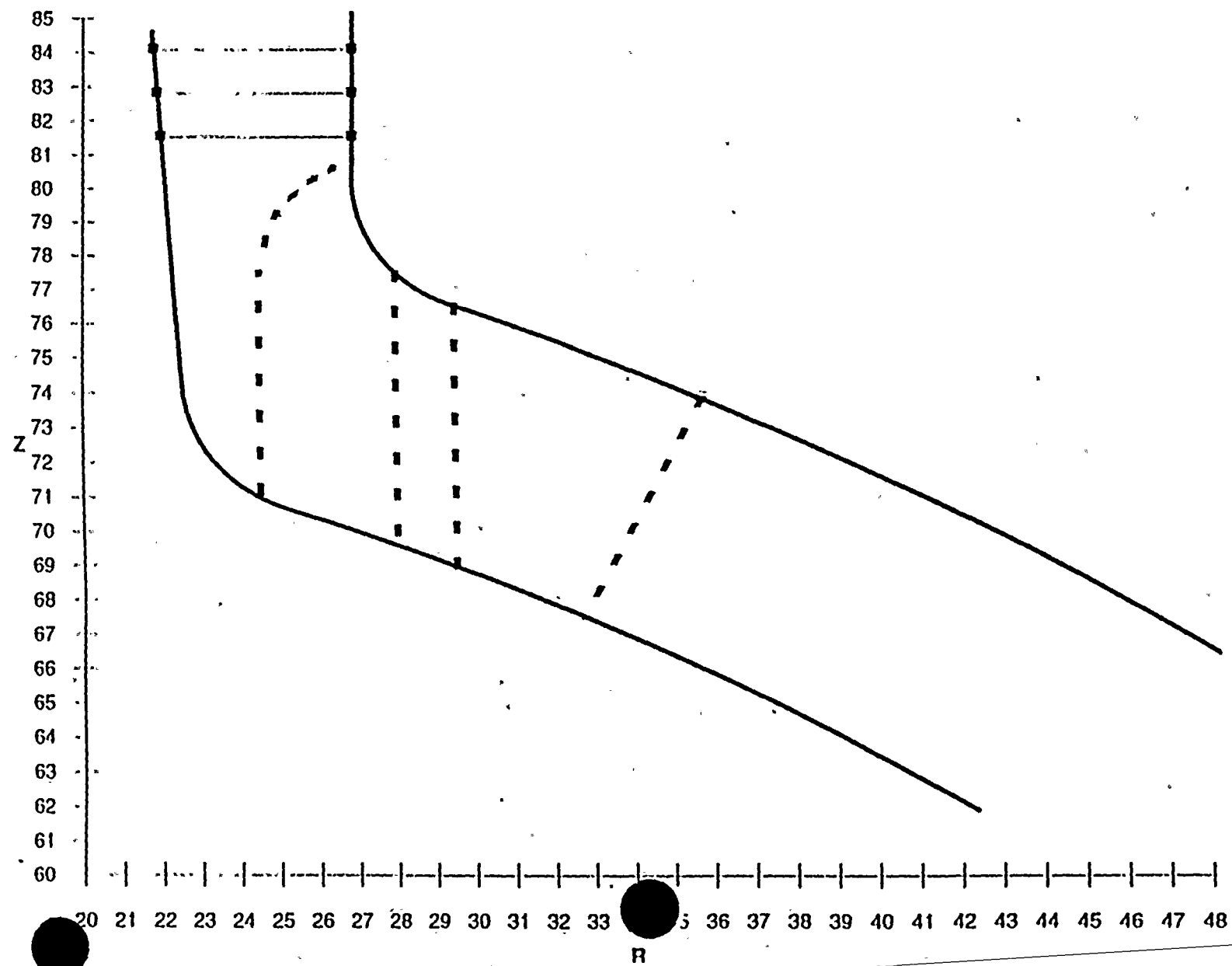
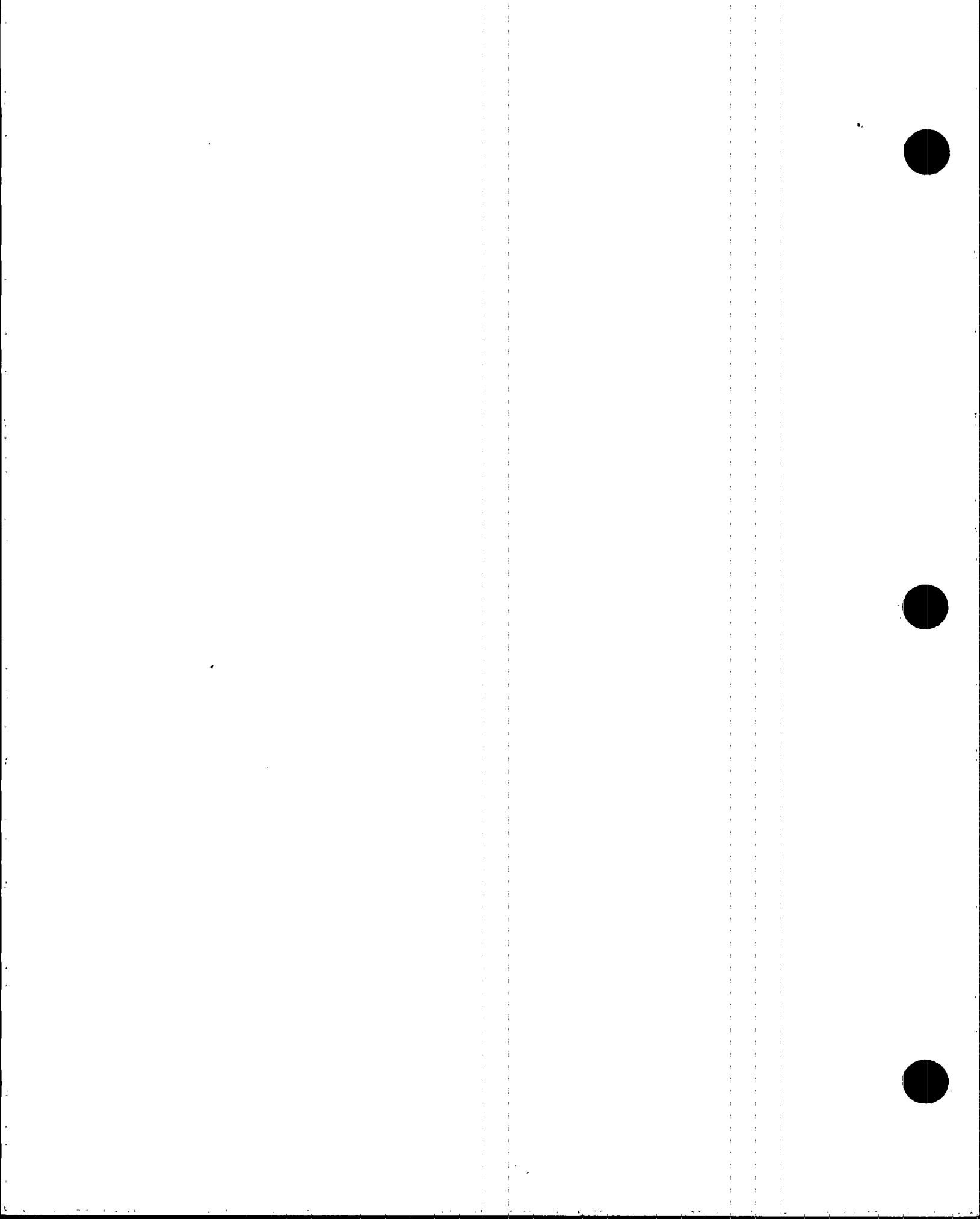


Figure 11



Coverage For Probe Angle=60 Deg; Probe Skew=90 Deg (CP-SGPIN)





Combined Coverage (CP-SGPIN)

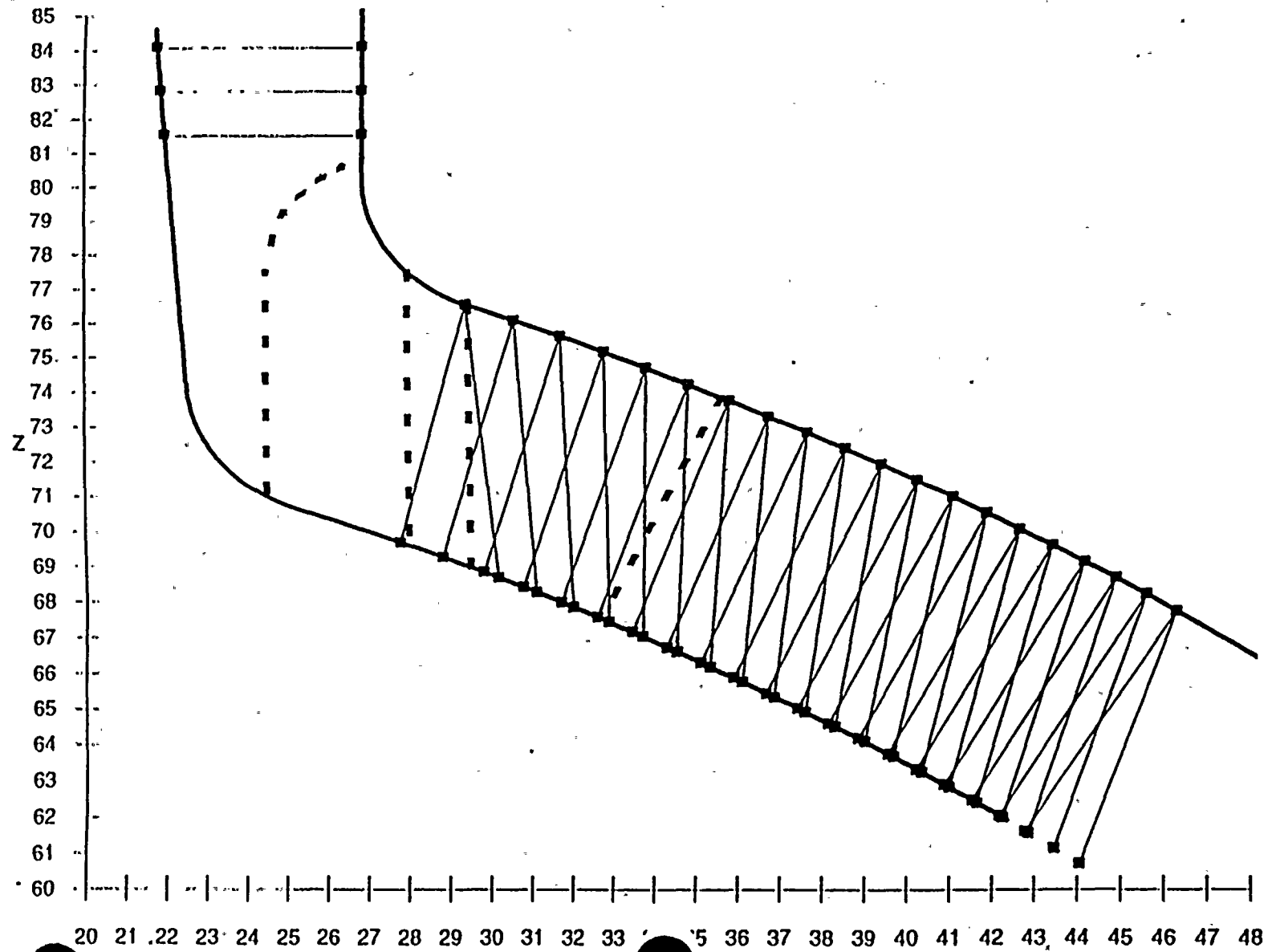


Figure 13

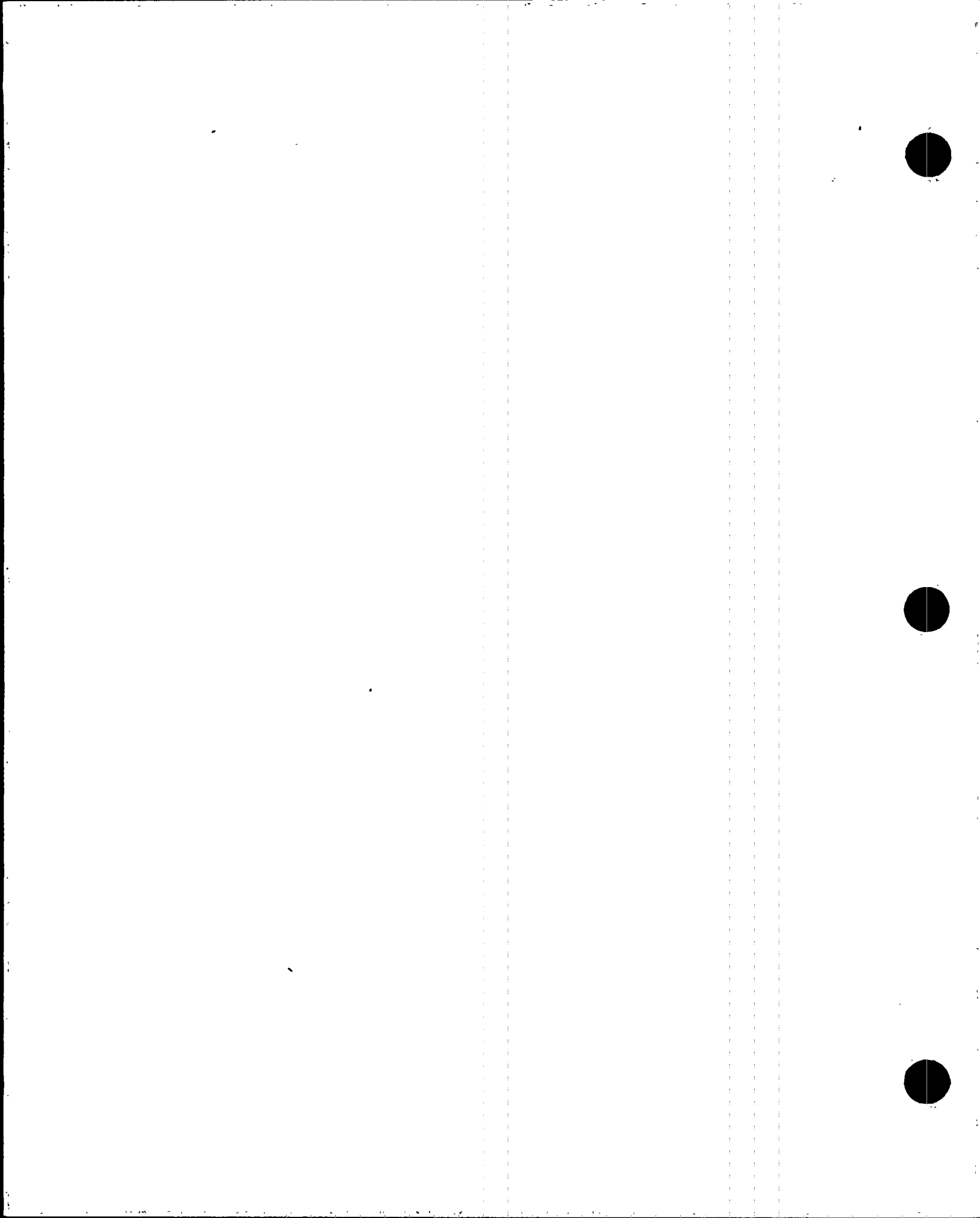


Table 4. Coverage Table: SG Inlet; 45° and 60° probes scanned transversely on vessel head and nozzle boss (+/-20° probe skewing).

Probe Angle	45°	45°	60°	60°
Probe Skew	70°	110°	70°	110°
Probe Location	Head	Boss	Head	Boss
% Exam Vol. (C-D-E-F) Covered	100%	0%	100%	0%
% Exam Vol. (B-C-F-G) Covered	78%	0%	76%	0%
% Exam Vol. (A-B-G-H-I) Covered	19%	0%	16%	0%
Percent Total Weld Exam Volume (A-B-C-D-E-F-G-H-I) Covered	64%	0%	63%	0%

Palisades Steam Generator Outlet Nozzle

Nozzle Inside Corner Region

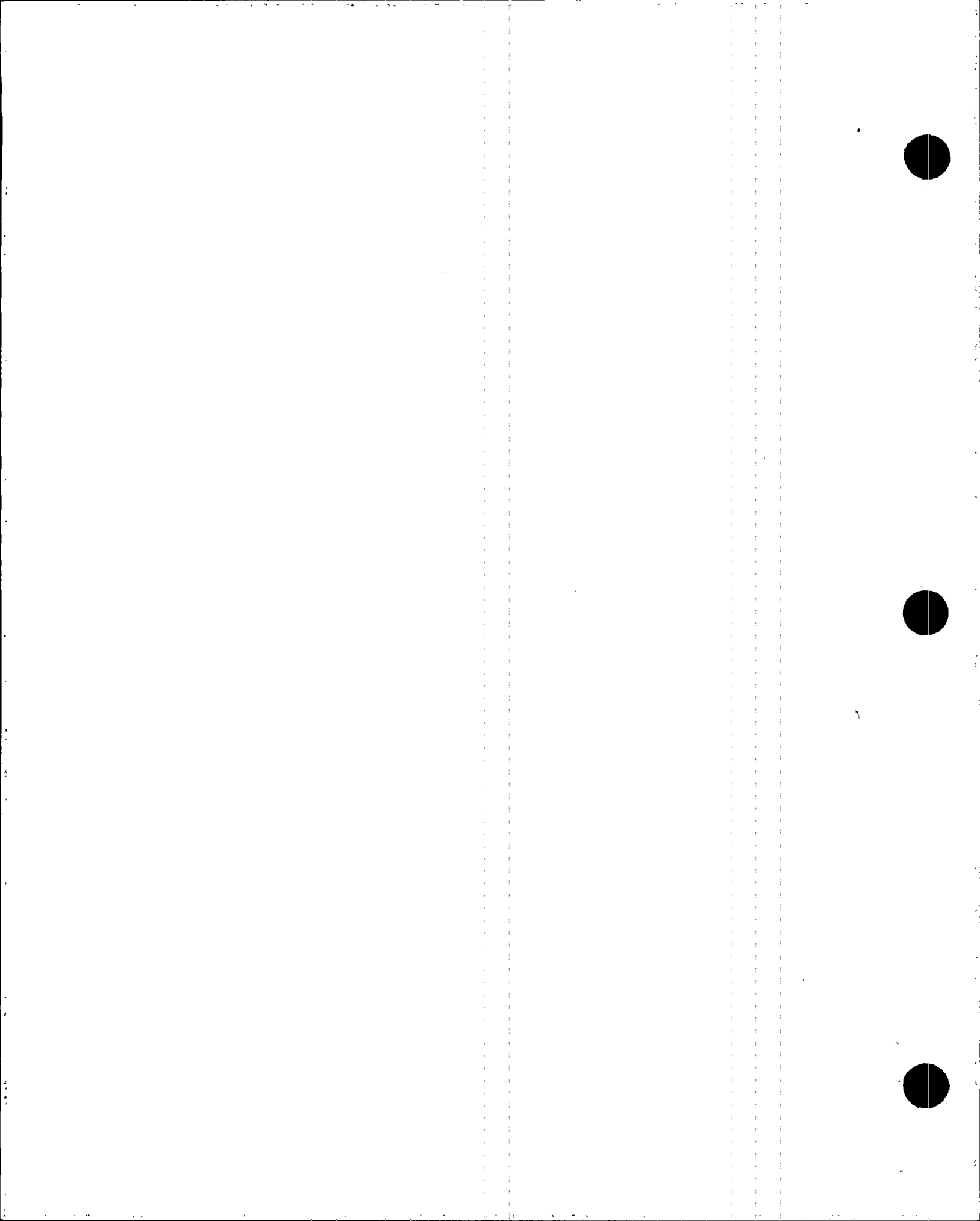
Table 5 shows the coverage calculated for a 35° probe, skewed 90° (35/90) (looking circumferentially) and scanned on the outer blend radius.

Table 5. Coverage Table: SG Outlet; 35°/90° (blend)

Probe Angle	35°
Probe Skew	90°
Probe Location	Blend*
Percentage of Examination Volume (M-N-O-P) Covered	100%

*Contoured Wedge

Figure 19 shows a cross section of the Palisades steam generator outlet nozzle upon which has been plotted the rays from the 35°/90° probe to the inside surface examination volume. As can be seen in Figure 19, the entire exam volume is covered by the 35°/90° probe scanned on the outer blend radius.



Coverage For Probe Angle=45 Deg; Probe Skew=70 Deg (CP-SGPIN)

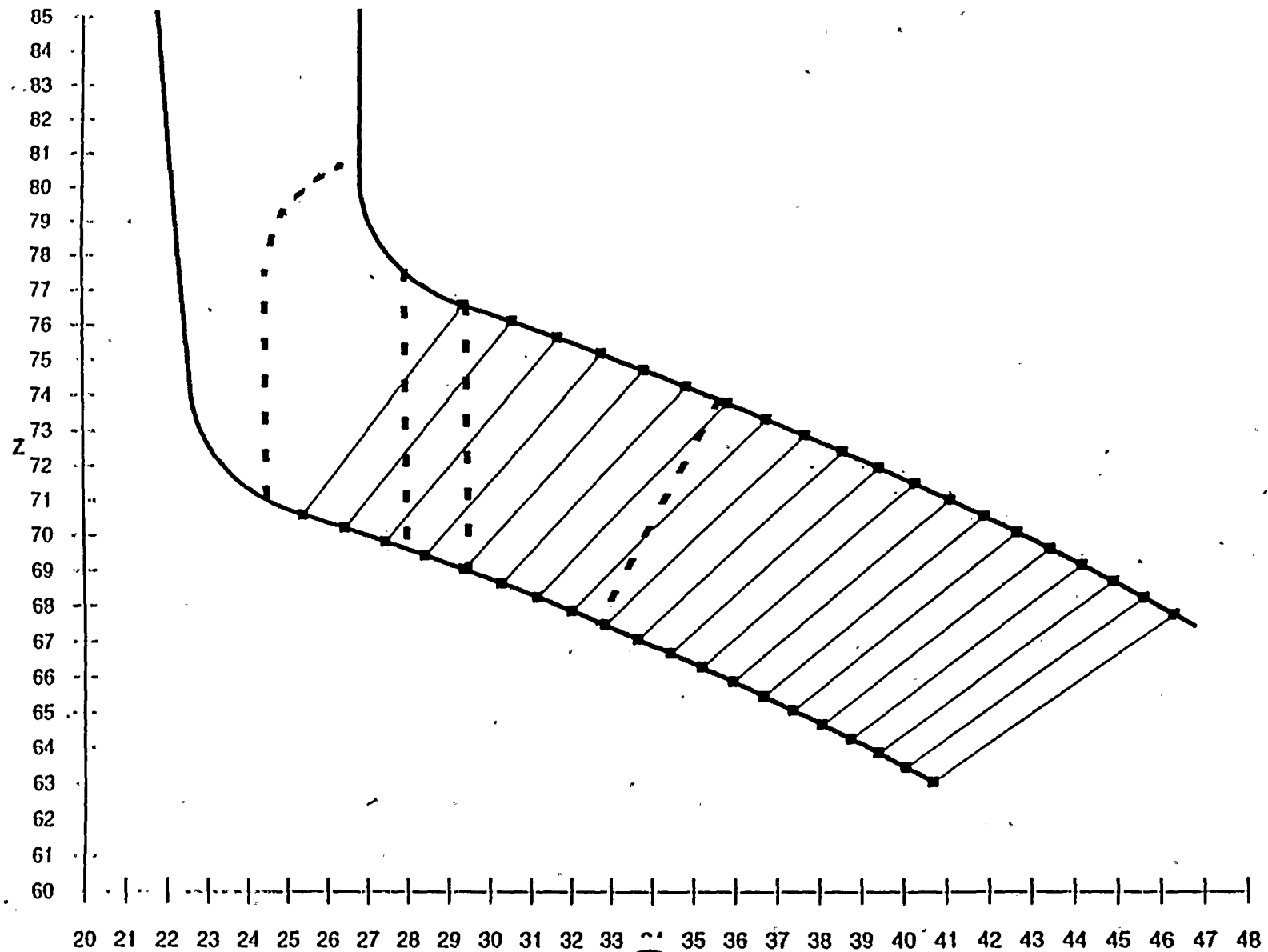
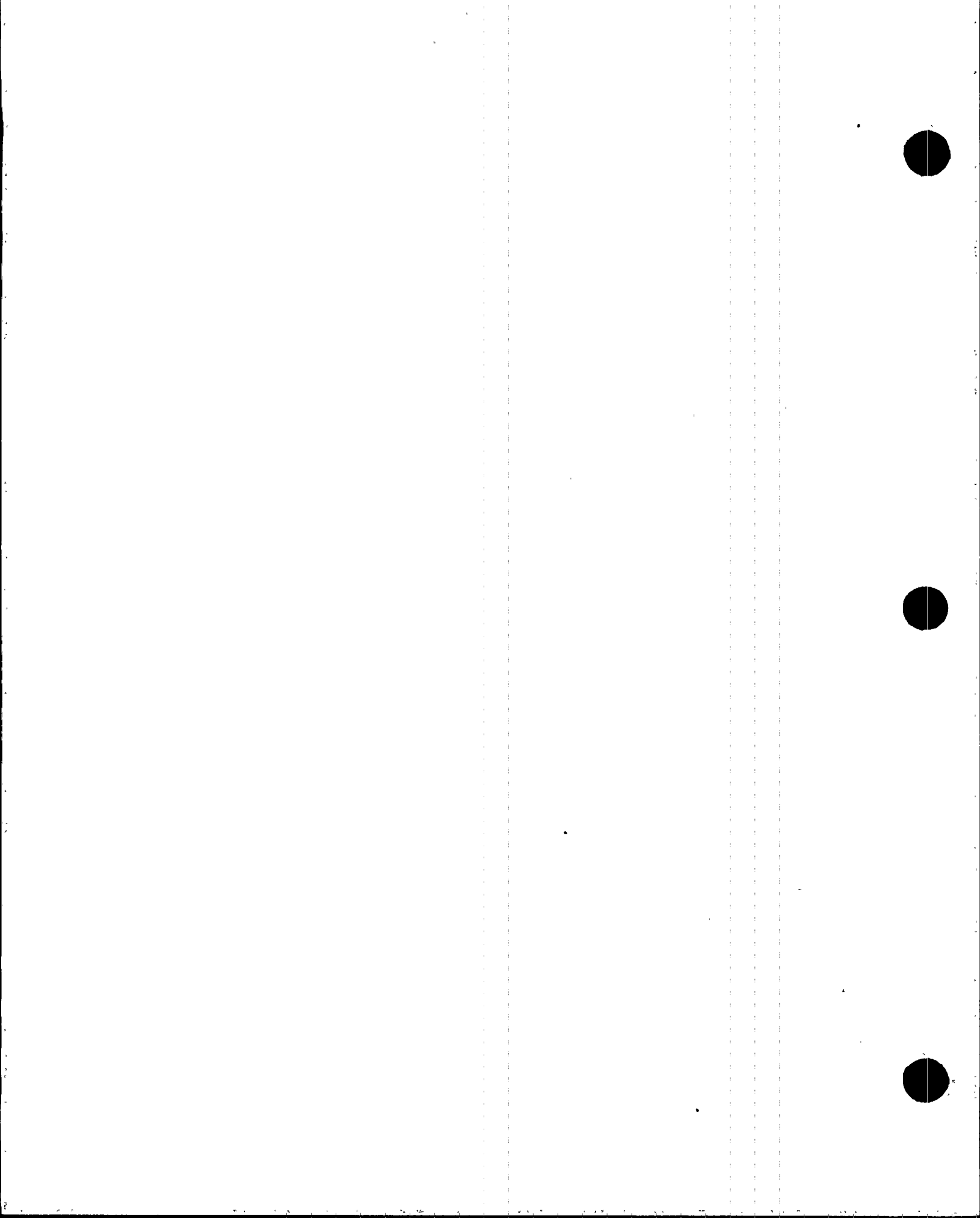


Figure 14



Coverage For Probe Angle=45 Deg; Probe Skew=110 Deg (CP-SGPIN)

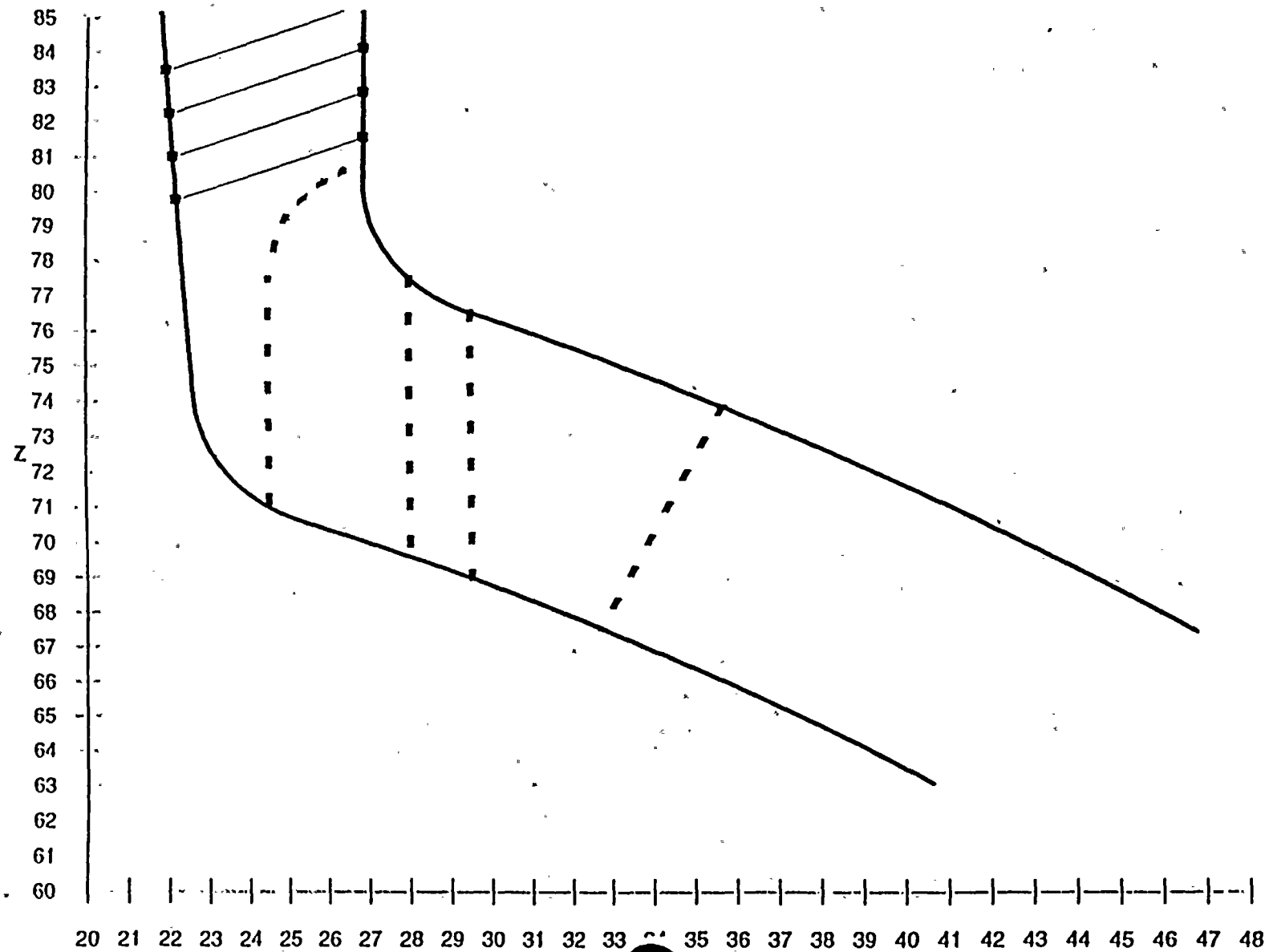


Figure 15

Coverage For Probe Angle=60 Deg; Probe Skew=70 Deg (CP-SGPIN)

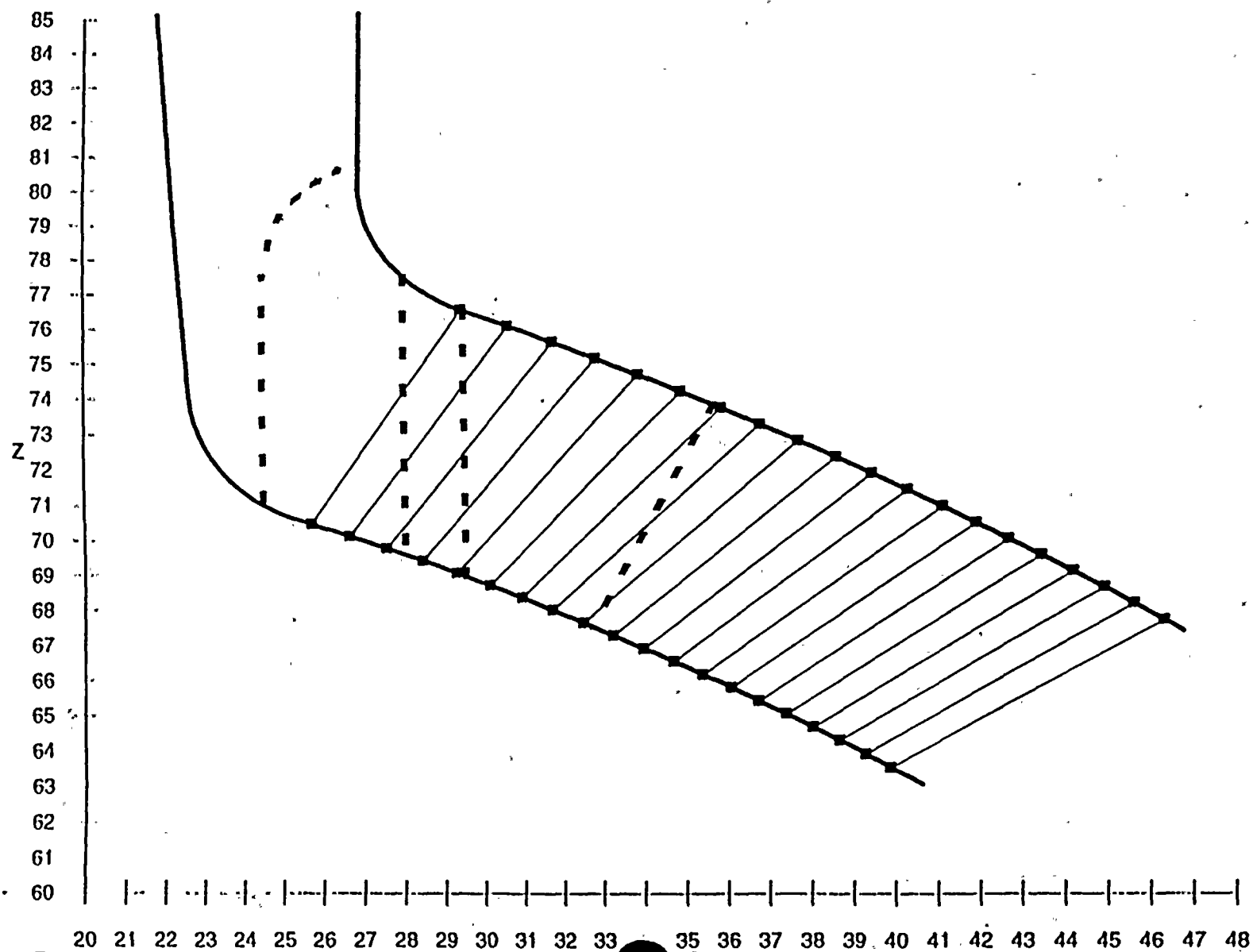
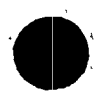


Figure 16

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Coverage For Probe Angle=60 Deg; Probe Skew=110 Deg (CP-SGPIN)

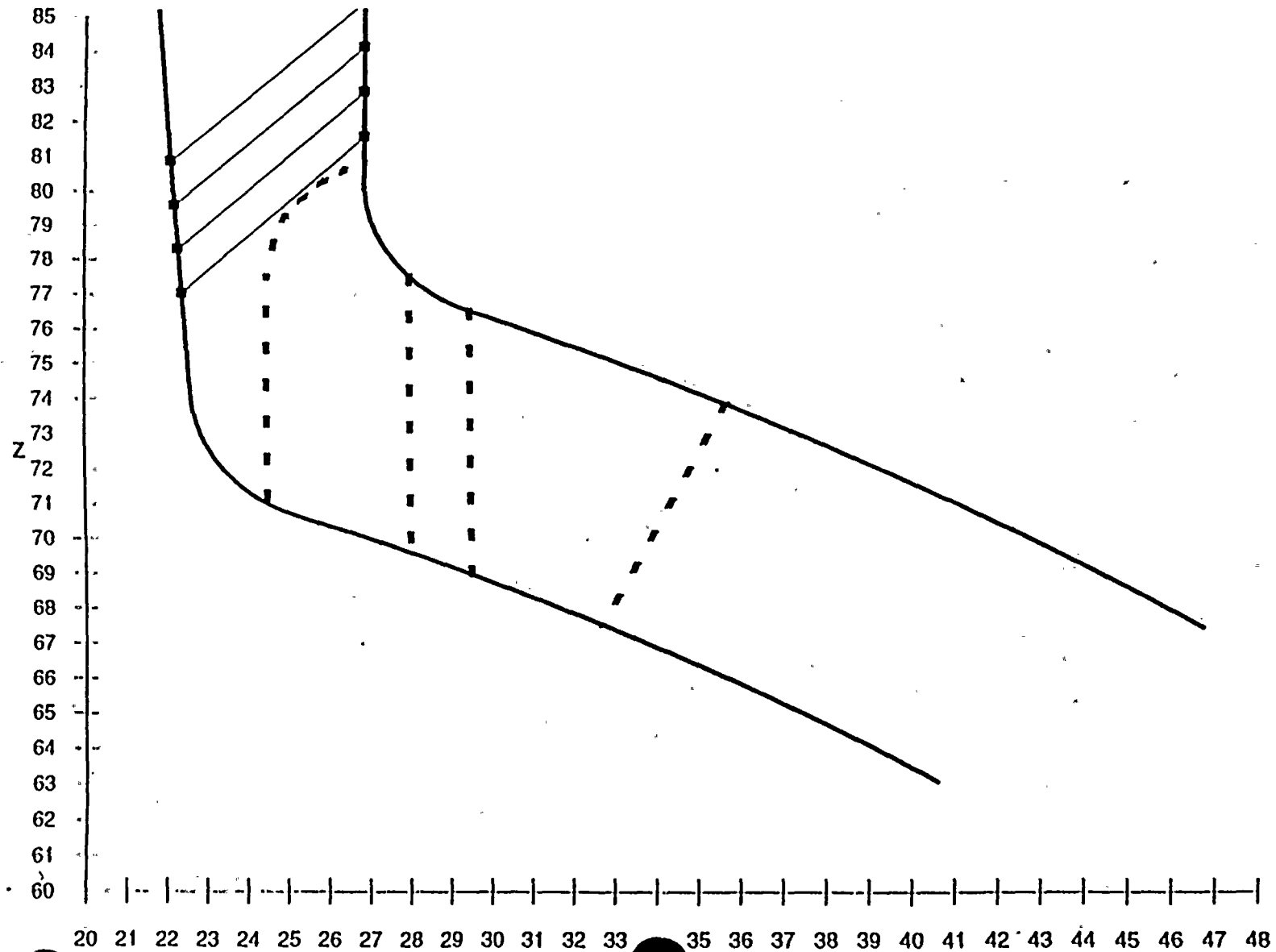
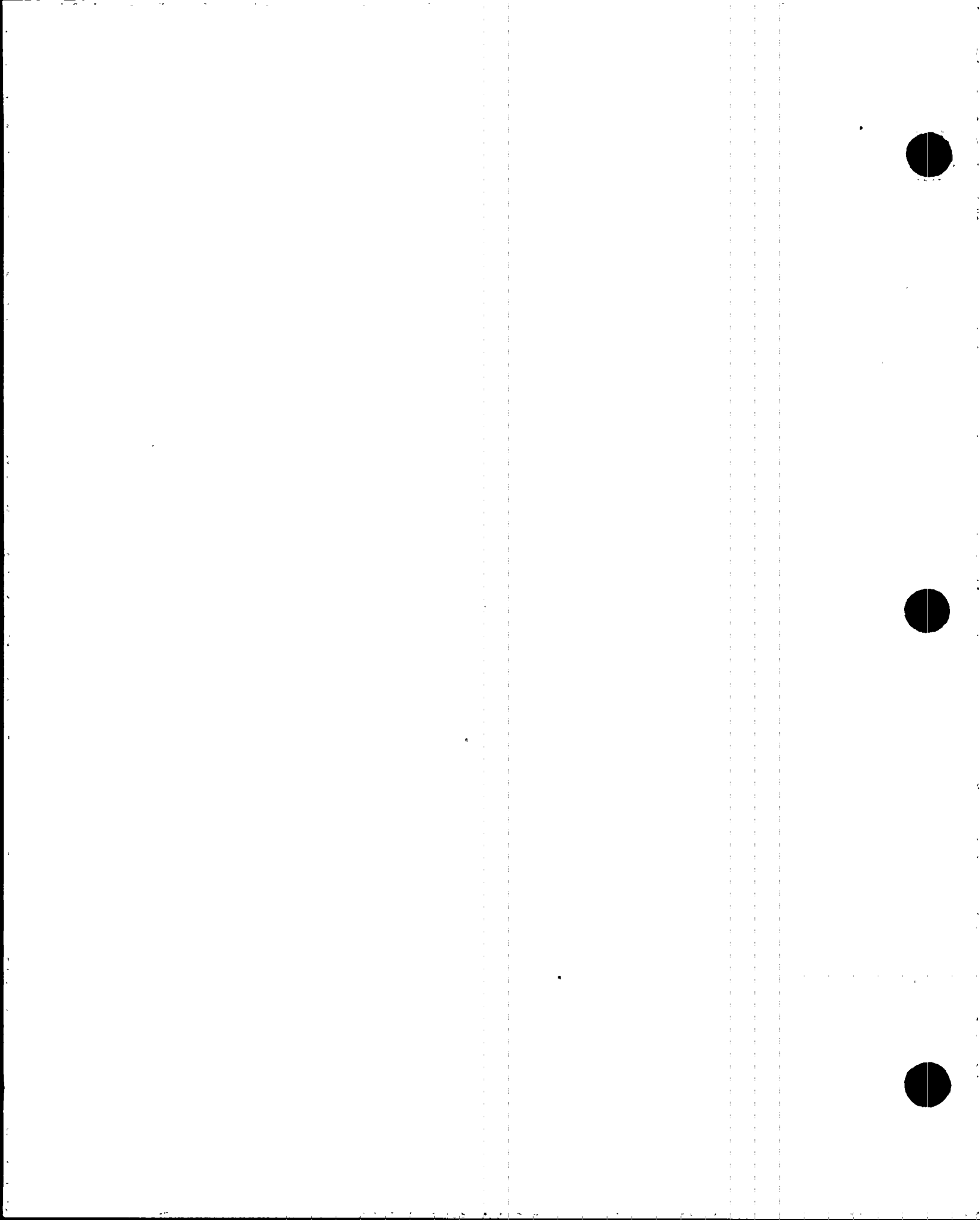


Figure 17



Combined Coverage (CP-SGPIN)

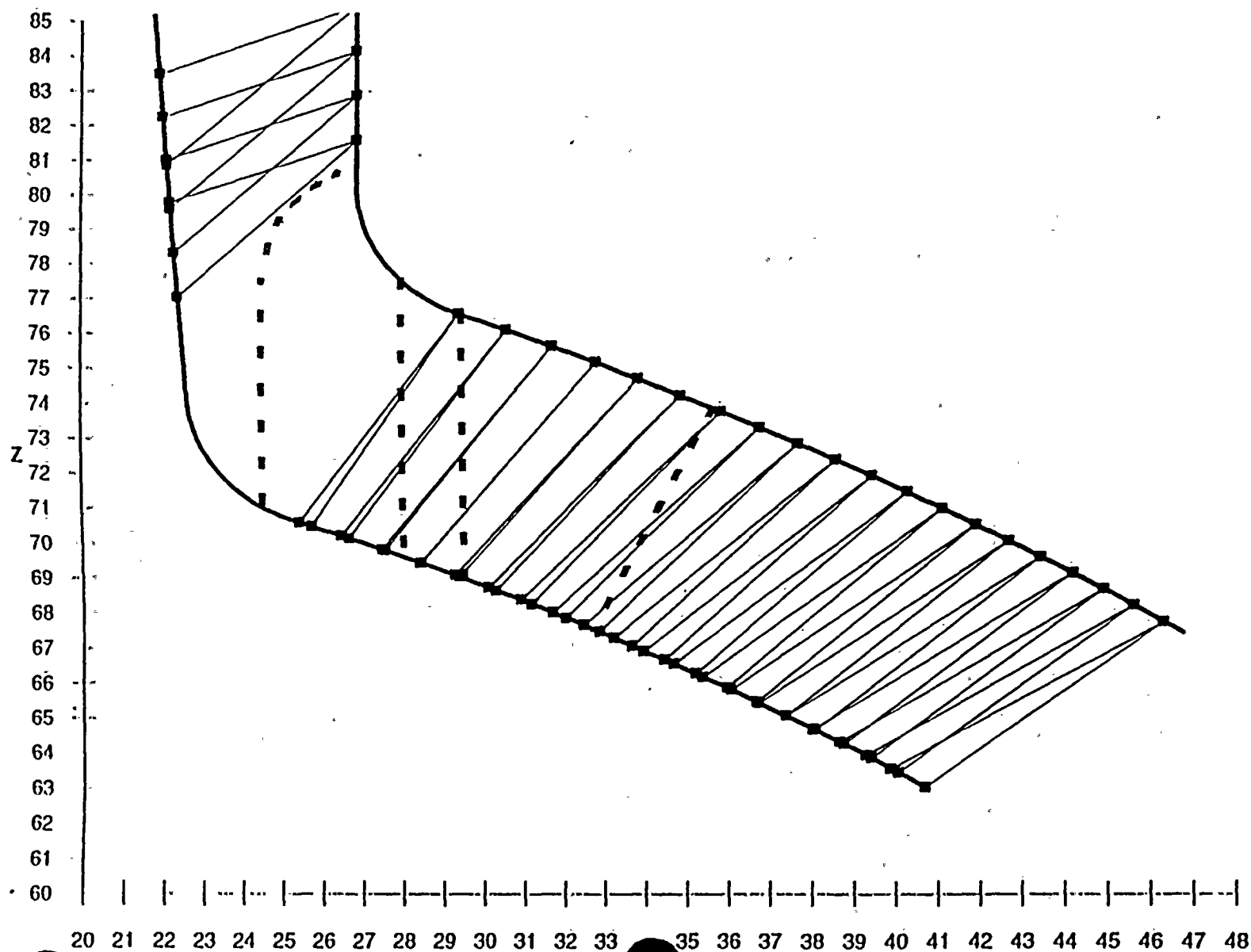
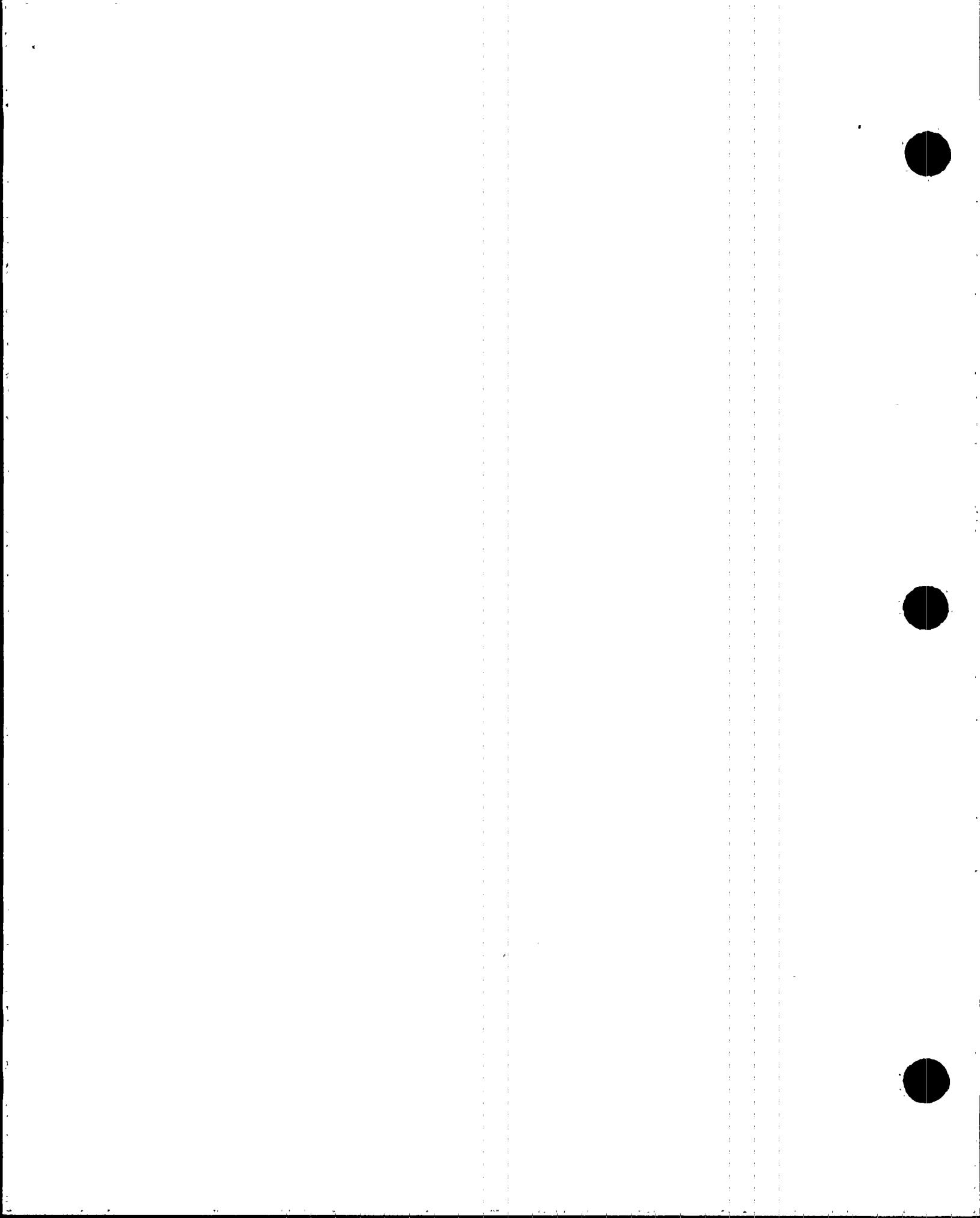


Figure 13



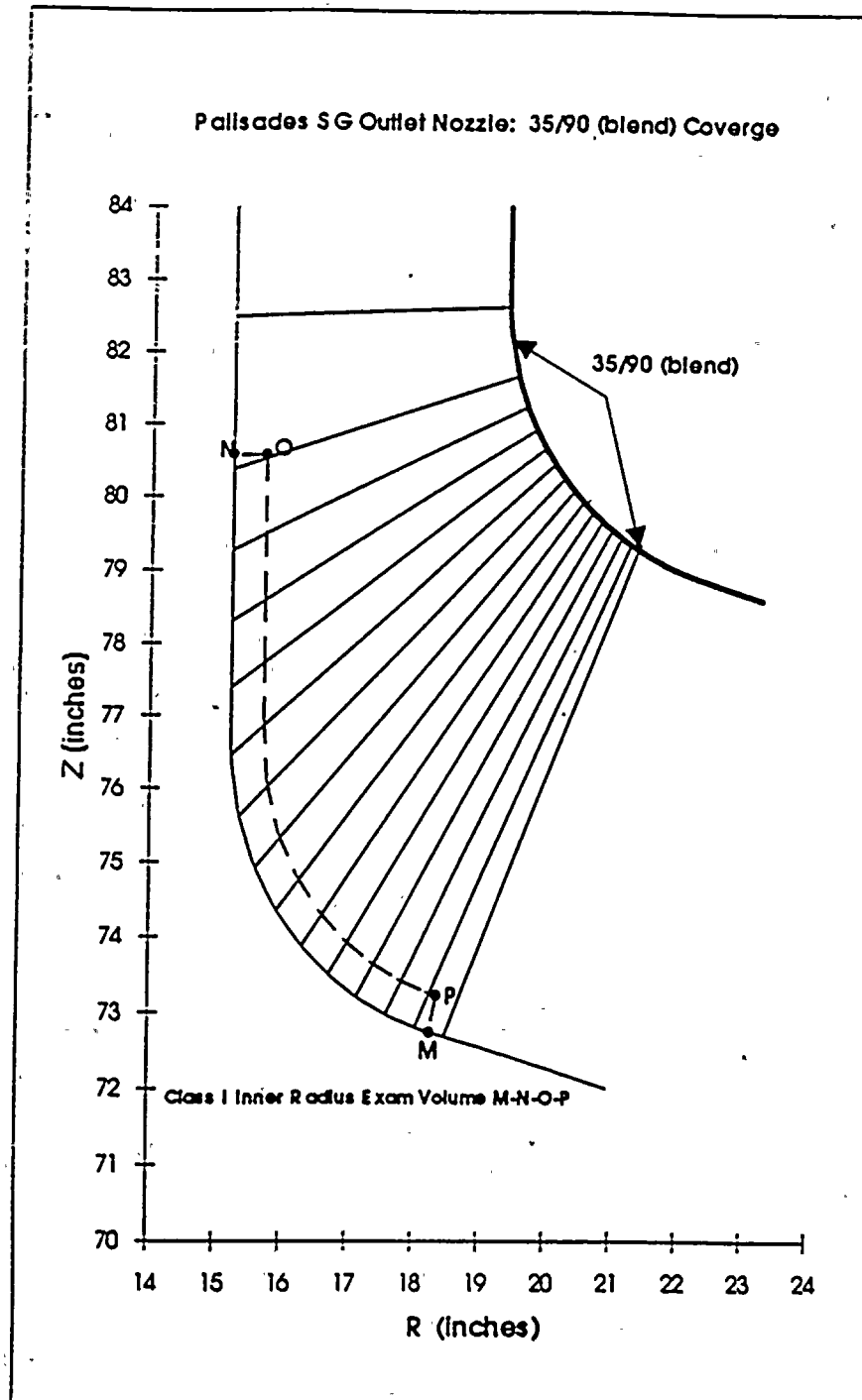
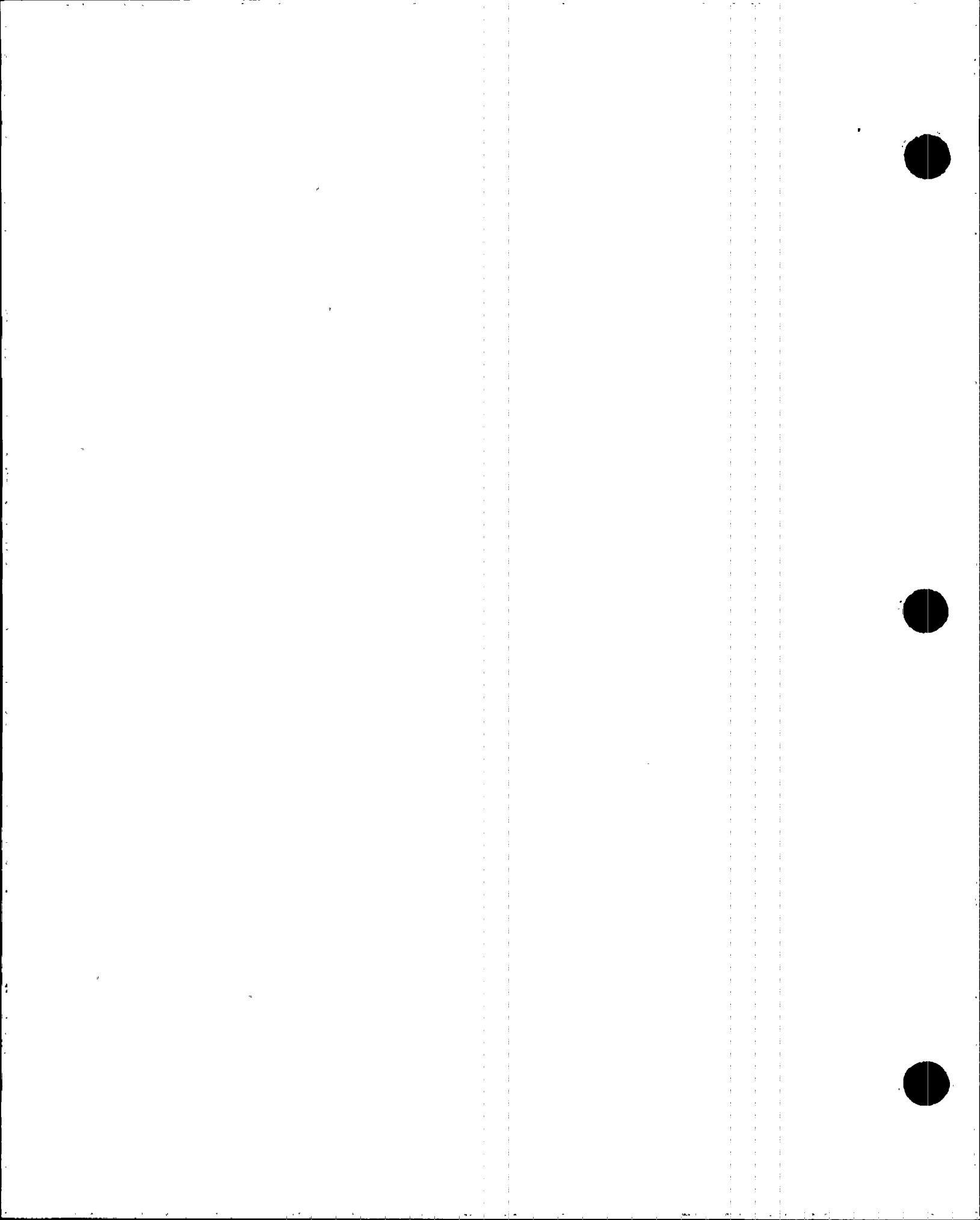


Figure 19. Palisades SG Outlet Nozzle: 35°/90° (blend) Coverage.

Nozzle-to-Head Weld Region

Figure 20 shows a cross section of the Palisades steam generator outlet nozzle which indicates the nozzle-to-head weld examination volume.



Examination Volume (CP-SGPON)

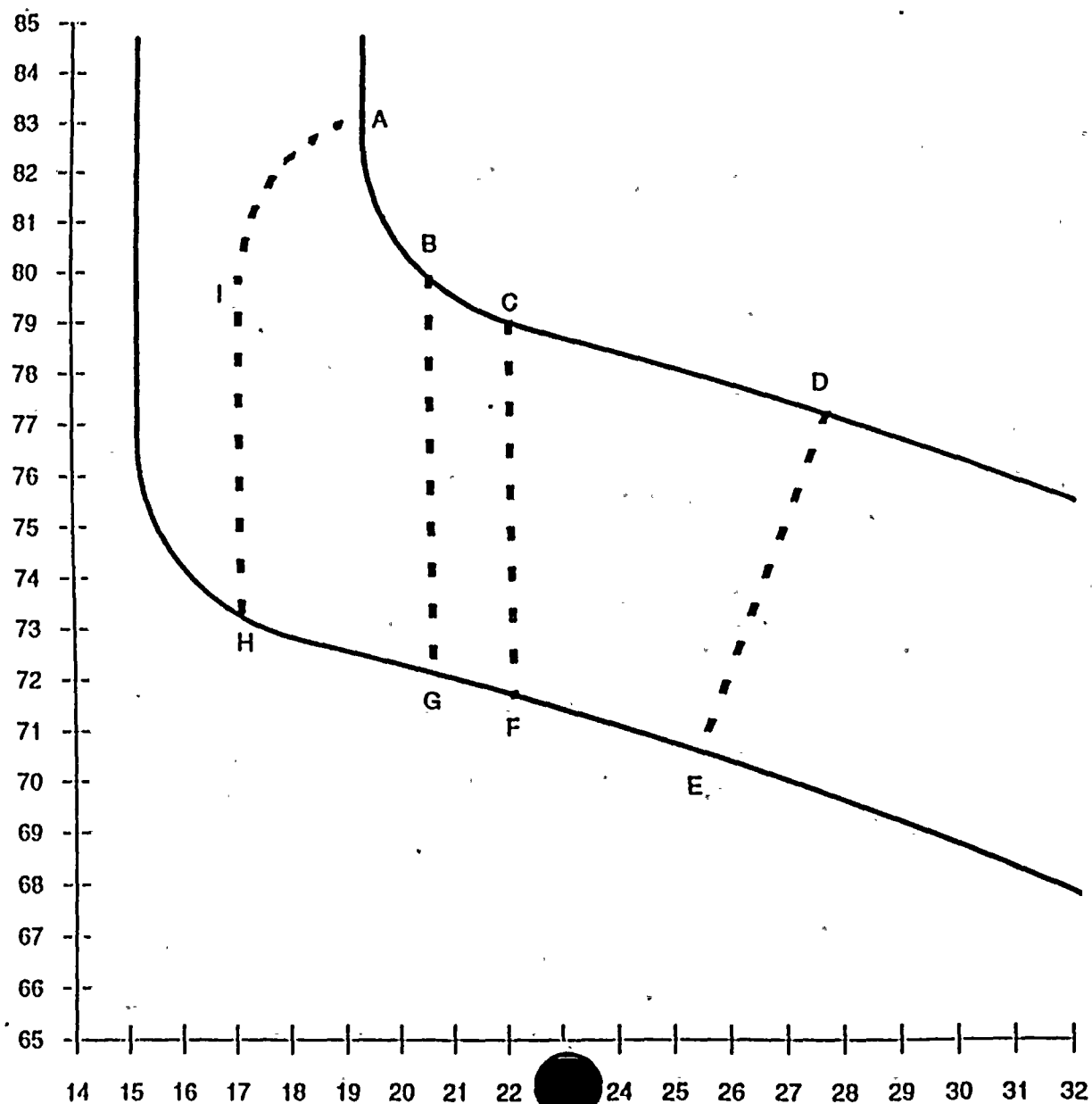


Figure 20

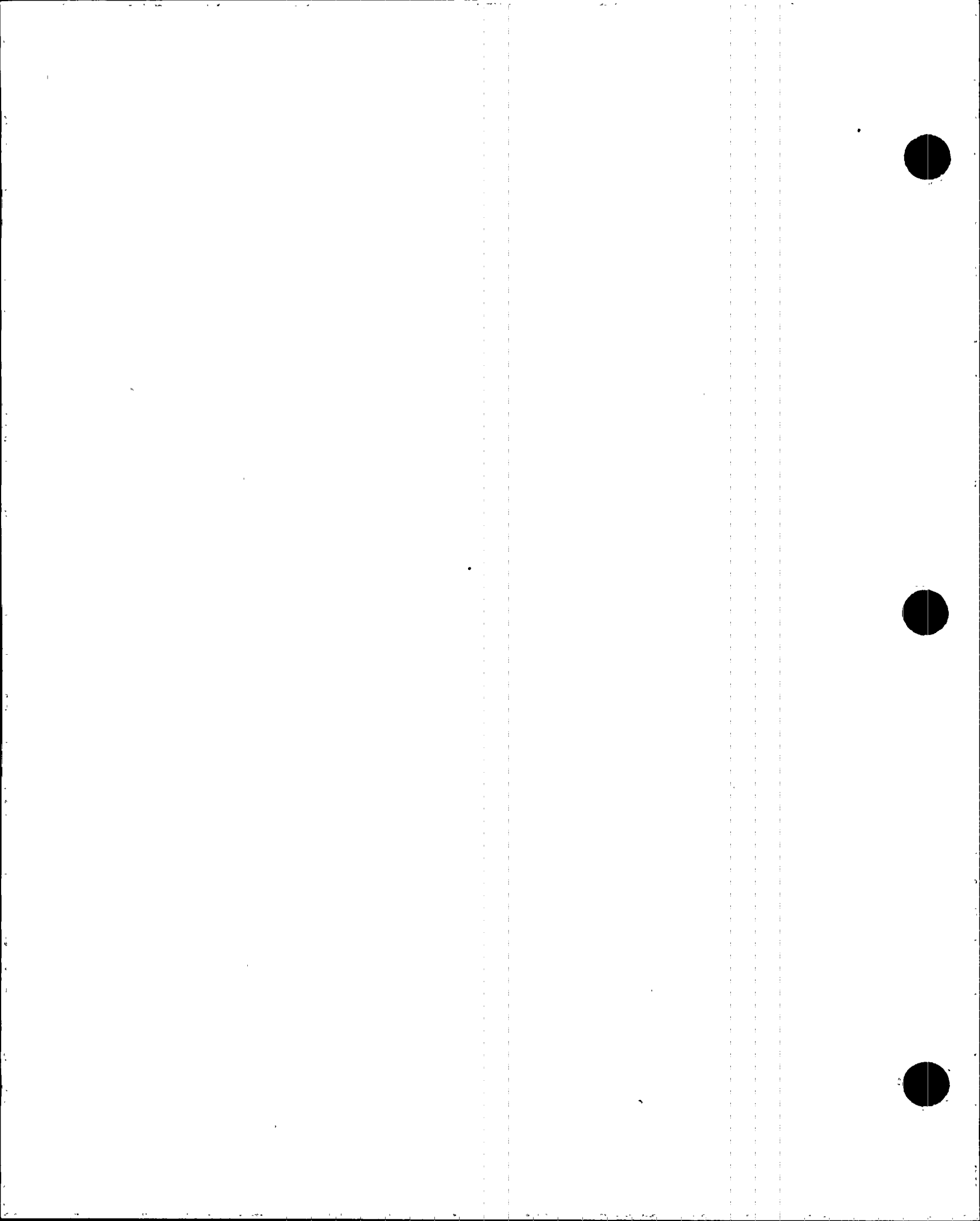


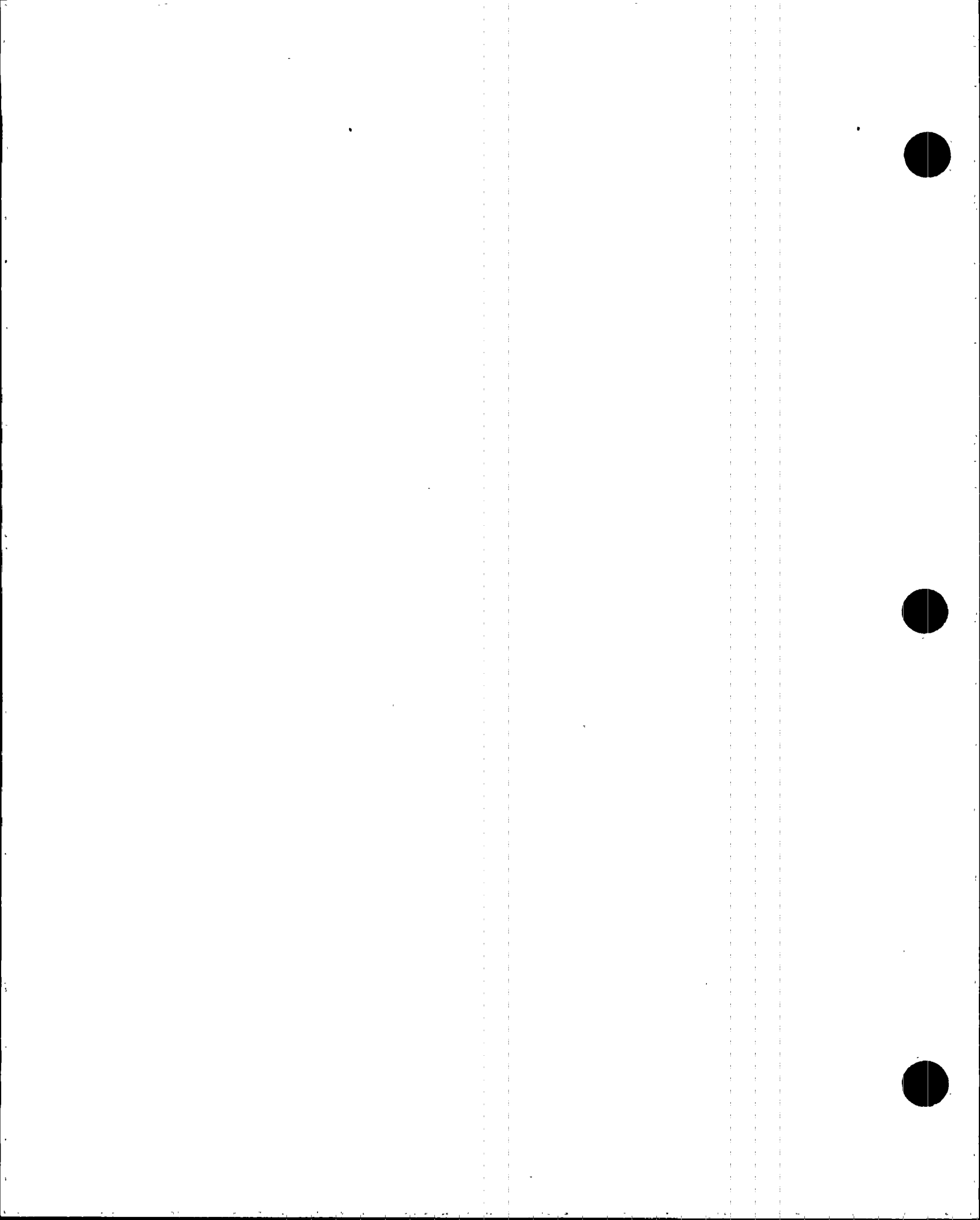
Table 6 lists the coverage obtained from the axial scans of 45° and 60° probes scanned on the vessel head and nozzle boss. The percent coverage is listed for the head adjoining region C-D-E-F, the attachment weld region B-C-F-G, and the nozzle cylinder region A-B-G-H-I; as well as, the entire weld examination volume A-B-C-D-E-F-G-H-I (See Figures 1 and 20).

Table 6. Coverage Table: SG Outlet; 45° and 60° probes scanned axially on vessel head and nozzle boss.

Probe Angle	45°	45°	60°	60°
Probe Skew	0°	180°	0°	180°
Probe Location	Head	Boss	Head	Boss
% Exam Vol. (C-D-E-F) Covered	100%	0%	100%	0%
% Exam Vol. (B-C-F-G) Covered	87%	0%	91%	0%
% Exam Vol. (A-B-G-H-I) Covered	48%	0%	60%	10%
Percent Total Weld Exam Volume (A-B-C-D-E-F-G-H-I) Covered	74%	0%	80%	5%

Figures 21 through 24 support the calculated axial scan coverage listed in Table 6. Figure 21 shows a cross section of the Palisades steam generator outlet nozzle upon which has been plotted the rays of the axial scan of the 45°/0°(head scan) probe through the weld examination volume. Figure 22 shows the cross section with the rays of the axial scan of the 45°/180°(boss scan) probe. Figure 23 shows the cross section with the rays of the axial scan of the 60°/0° probe through the weld examination volume. Figure 24 shows the cross section with the rays of the axial scan of the 60°/180° probe. Figure 25 shows the combined coverage achieved by all the axial scans of the nozzle-to-head weld.

Table 7 lists the coverage obtained from the transverse scans (no probe skewing) of 45° and 60° probes scanned on the vessel head and nozzle boss. Figures 26 through 29 support the calculated transverse scan coverage listed in Table 7. Figure 26 shows a cross section of the Palisades steam generator outlet nozzle upon which has been plotted the rays of the transverse scan of the 45° probe from the head through the weld examination volume with no probe skewing. Figure 27 shows the cross section with the rays of the transverse scan of the 45° probe from the boss. Figure 28 shows the cross



Coverage For Probe Angle=45 Deg; Probe Skew=0 Deg (CP-SGPON)

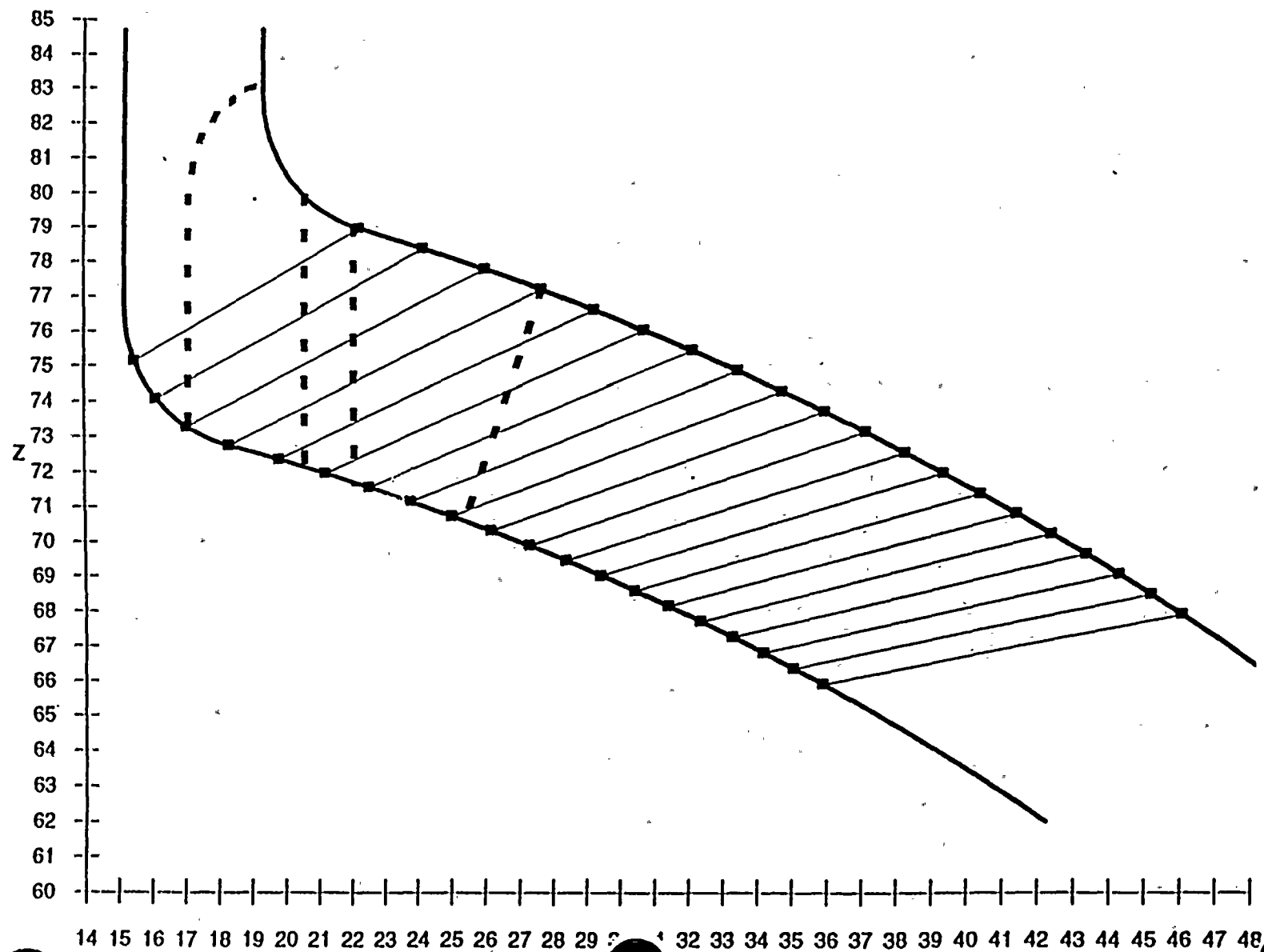


Figure 21



Coverage For Probe Angle=45 Deg; Probe Skew=180 Deg (CP-SGPON)

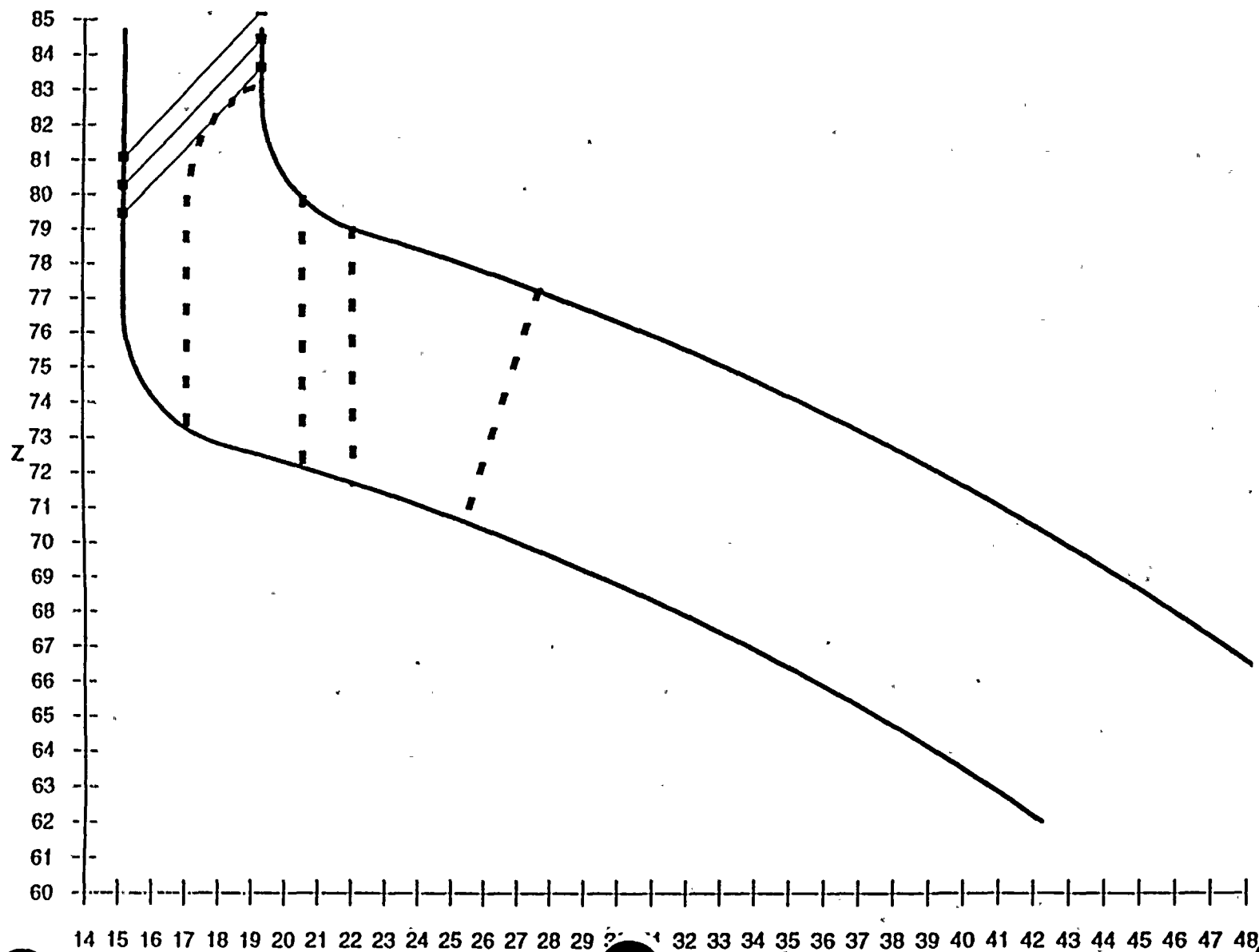


Figure 22

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Coverage For Probe Angle=60 Deg; Probe Skew=0 Deg (CP-SGPON)

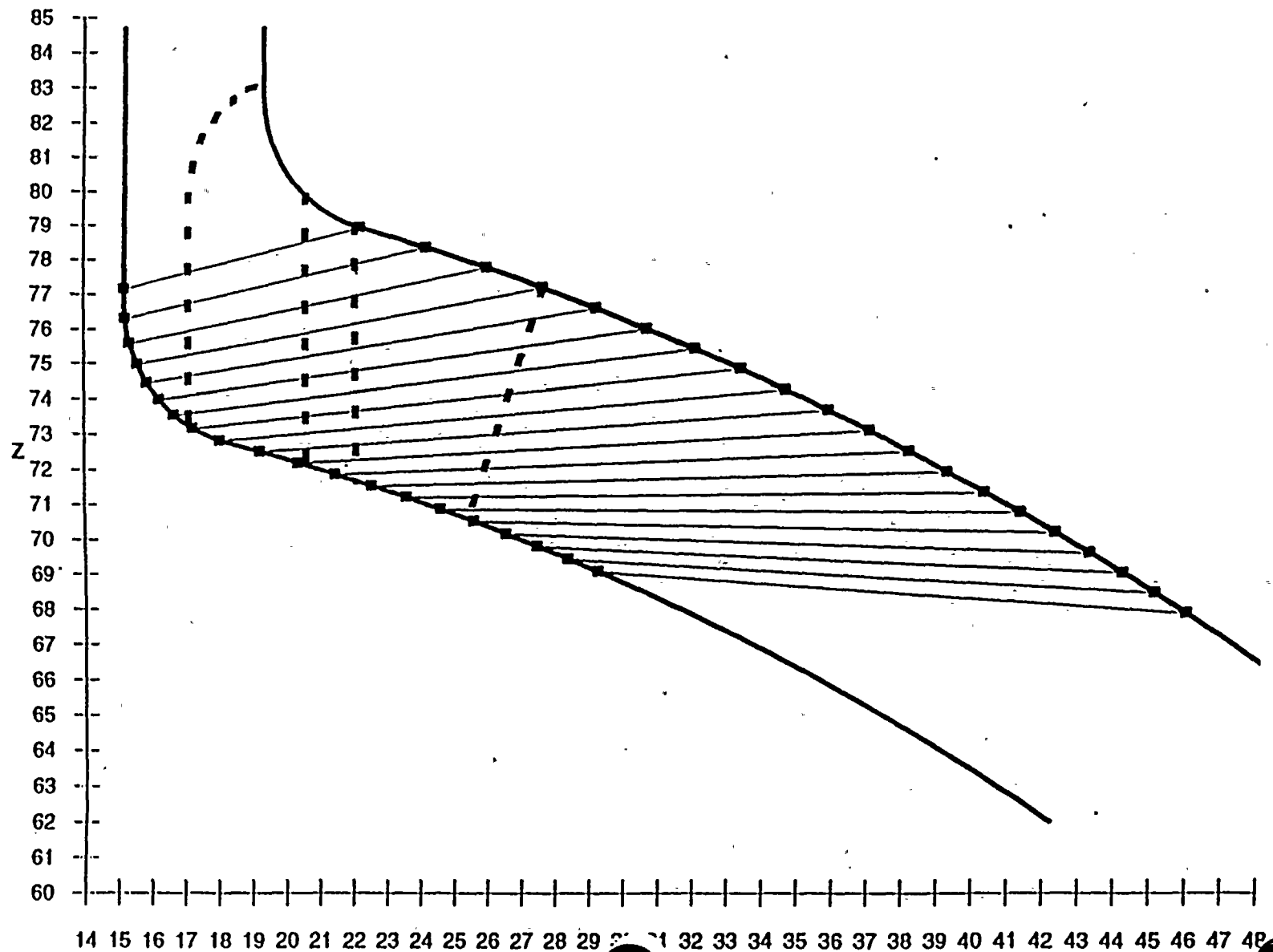


Figure 23



Coverage For Probe Angle=60 Deg; Probe Skew=180 Deg (CP-SGPON)

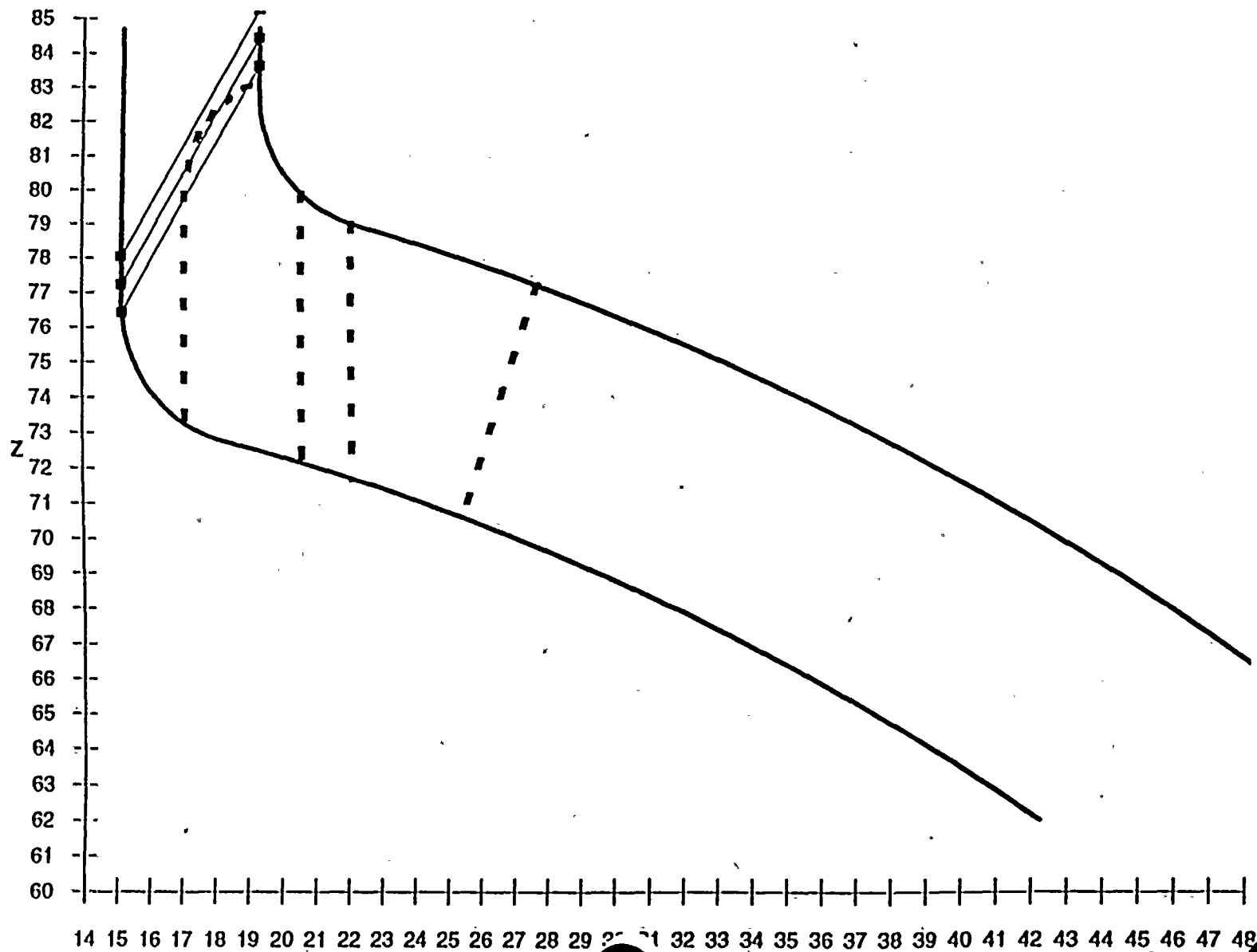


Figure 24



Combined Coverage (CP-SGPON)

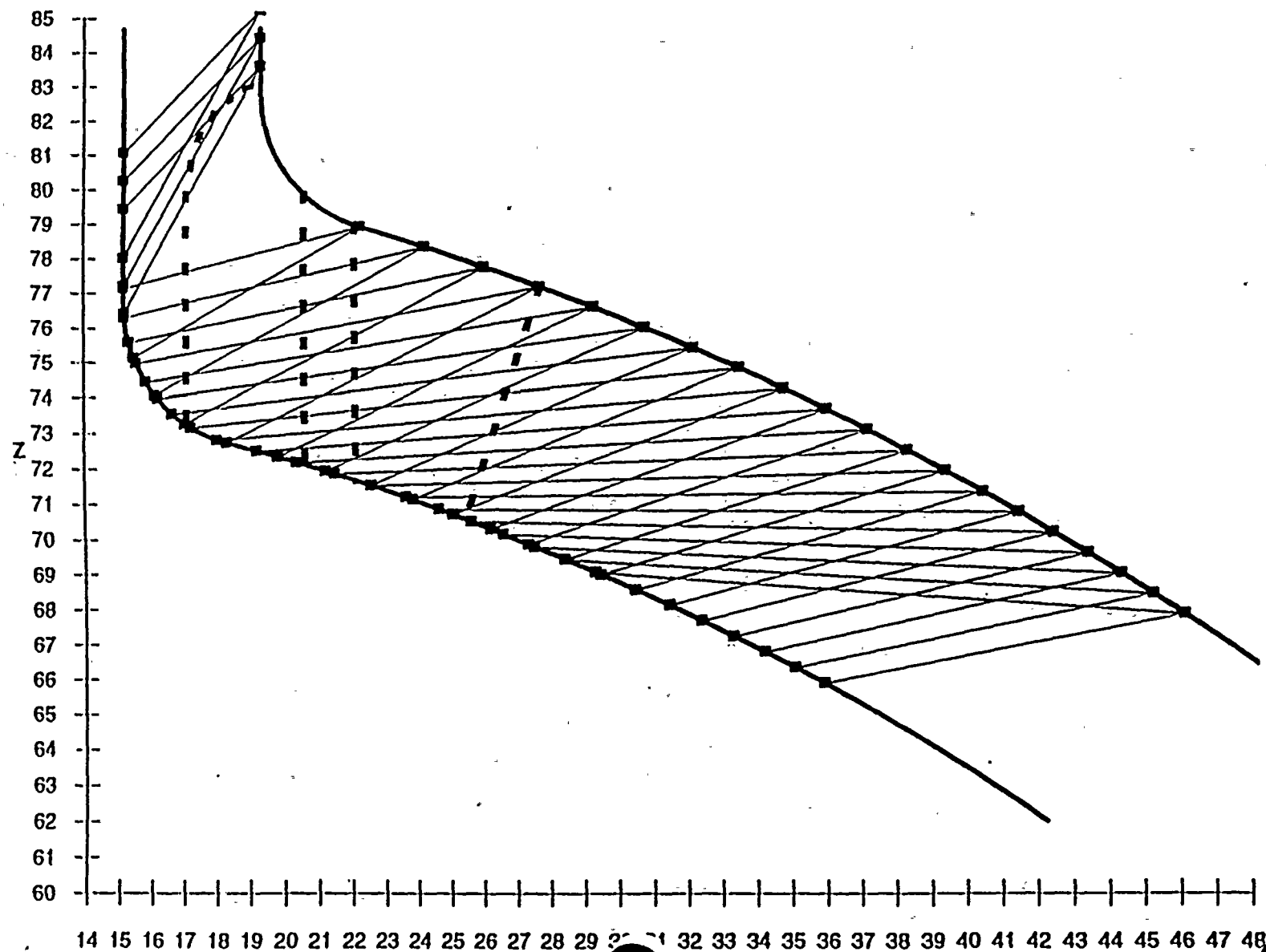


Figure 25

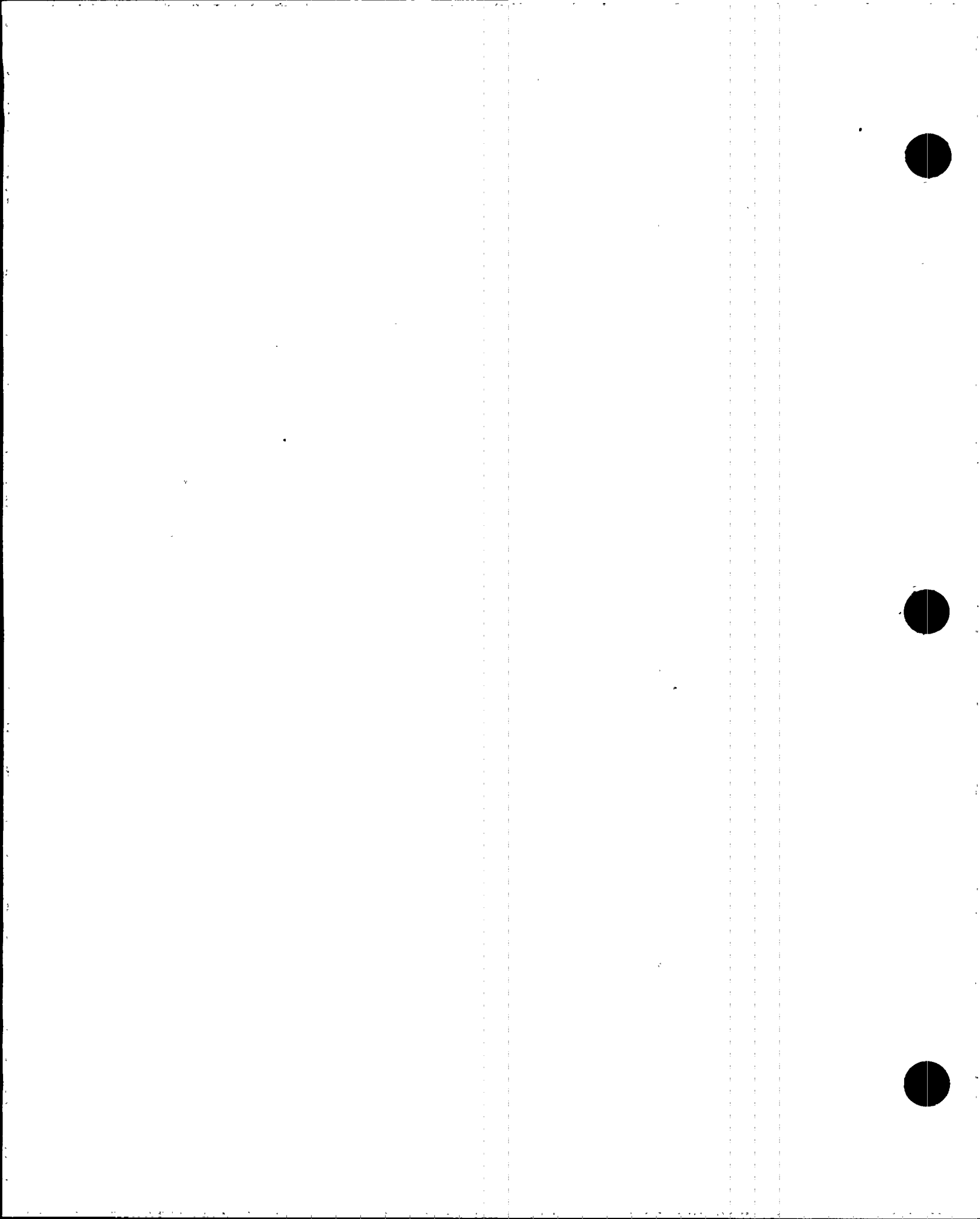
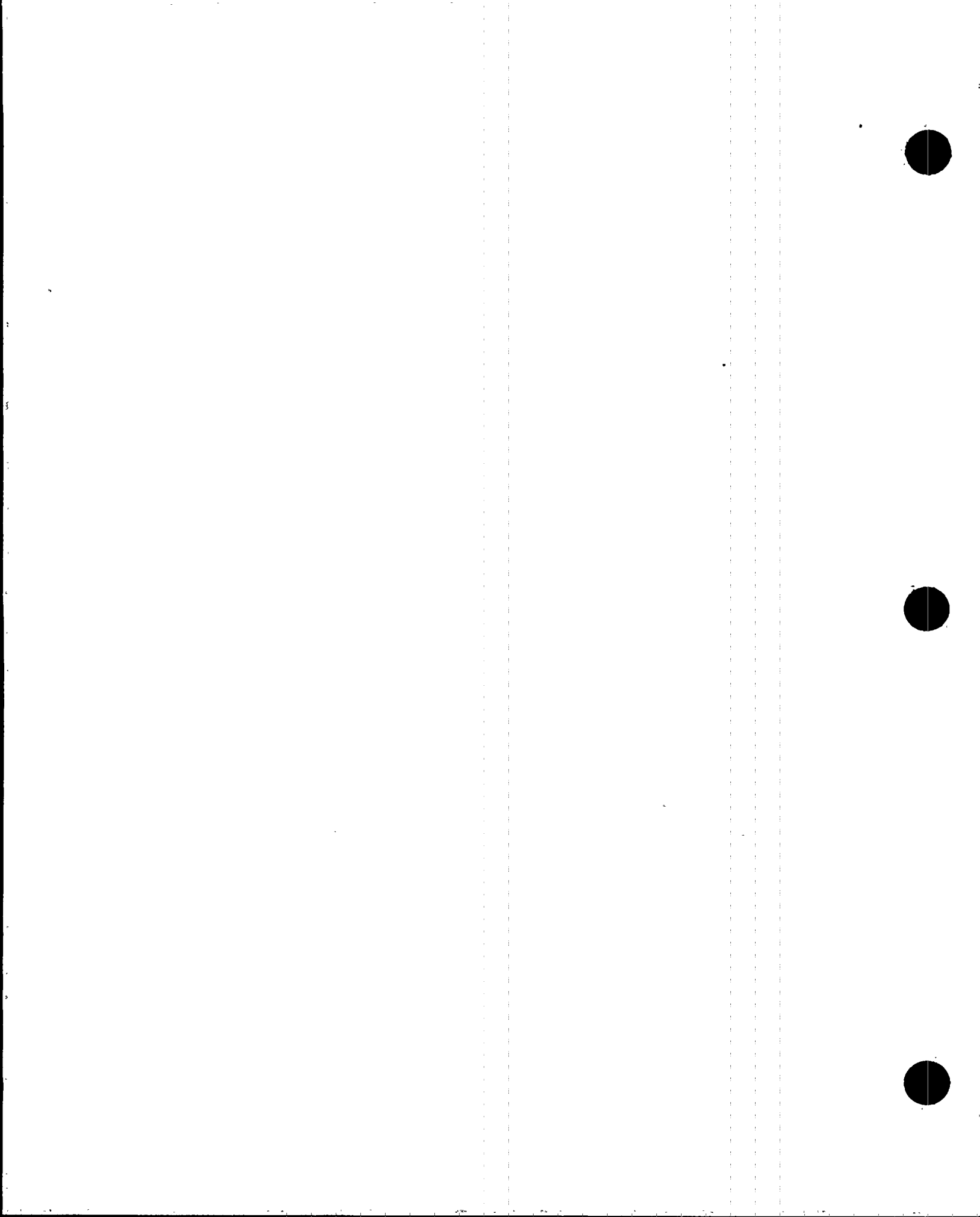


Table 7. Coverage Table: SG Outlet; 45° and 60° probes scanned transversely on vessel head and nozzle boss (no probe skewing).

Probe Angle	45°	45°	60°	60°
Probe Skew	90°	90°	90°	90°
Probe Location	Head	Boss	Head	Boss
% Exam Vol. (C-D-E-F) Covered	100%	0%	60%	0%
% Exam Vol. (B-C-F-G) Covered	14%	0%	0%	0%
% Exam Vol. (A-B-G-H-I) Covered	0%	0%	0%	0%
Percent Total Weld Exam Volume (A-B-C-D-E-F-G-H-I) Covered	39%	0%	22%	0%

section with the rays of the transverse scan of the 60° probe from the head through the weld examination volume. Figure 29 shows the cross section with the rays of the transverse scan of the 60° probe from the boss. Figure 30 shows the combined coverage achieved by all the transverse scans of the nozzle-to-head weld with no probe skewing.

Table 8 lists the coverage obtained from the transverse scans ($\pm 20^\circ$ probe skewing) of 45° and 60° probes scanned on the vessel head and nozzle boss. Figures 31 through 34 support the calculated transverse scan coverage listed in Table 8. Figure 31 shows a cross section of the Palisades steam generator outlet nozzle upon which has been plotted the rays of the transverse scan of the 45° probe from the head through the weld examination volume with $\pm 20^\circ$ probe skewing. Figure 32 shows the cross section with the rays of the transverse scan of the 45° probe from the boss. Figure 33 shows the cross section with the rays of the transverse scan of the 60° probe from the head through the weld examination volume. Figure 34 shows the cross section with the rays of the transverse scan of the 60° probe from the boss. Figure 35 shows the combined coverage achieved by all the transverse scans of the nozzle-to-head weld with $\pm 20^\circ$ probe skewing.



Coverage For Probe Angle=45 Deg; Probe Skew=90 Deg (CP-SGPON)

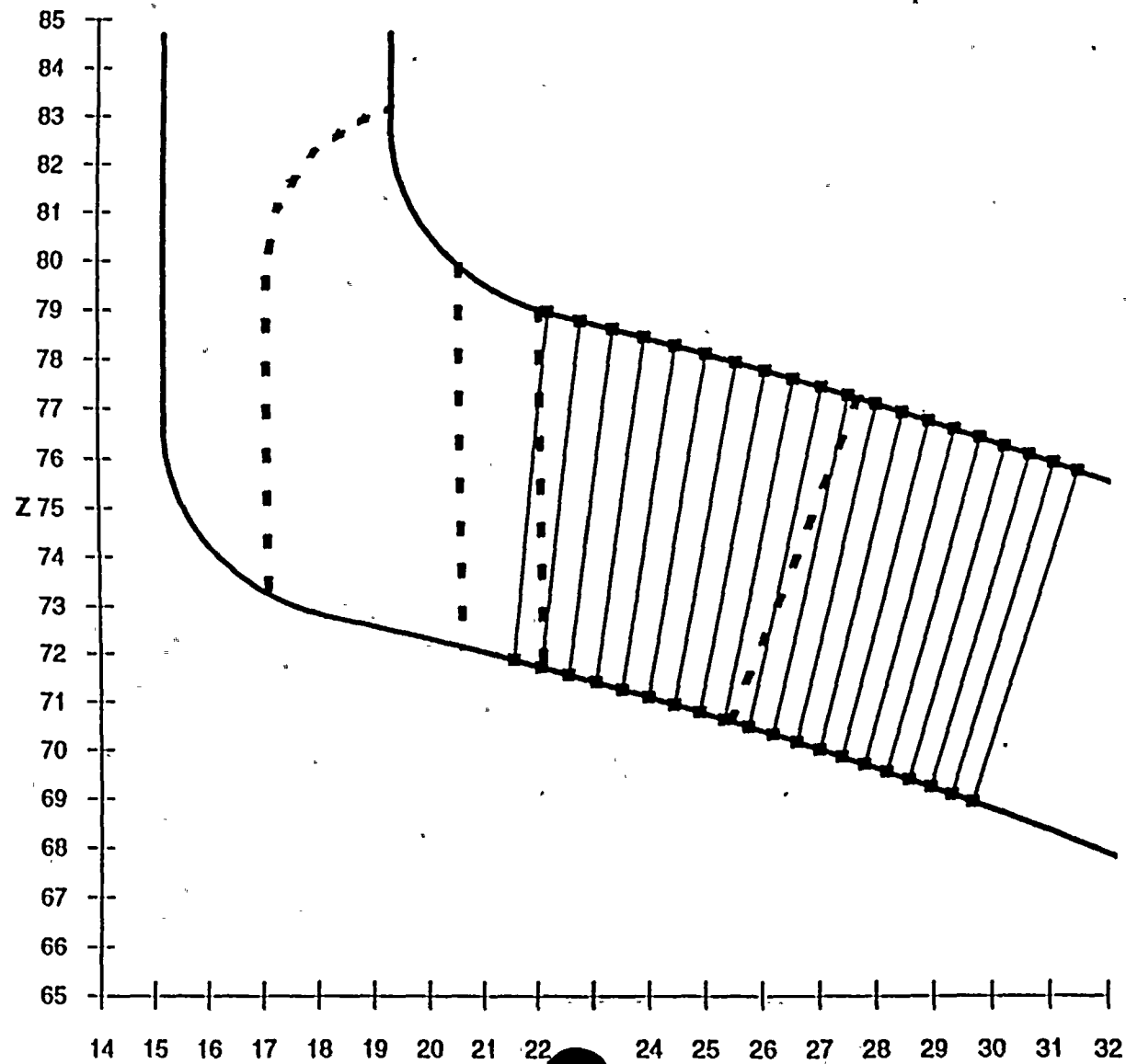
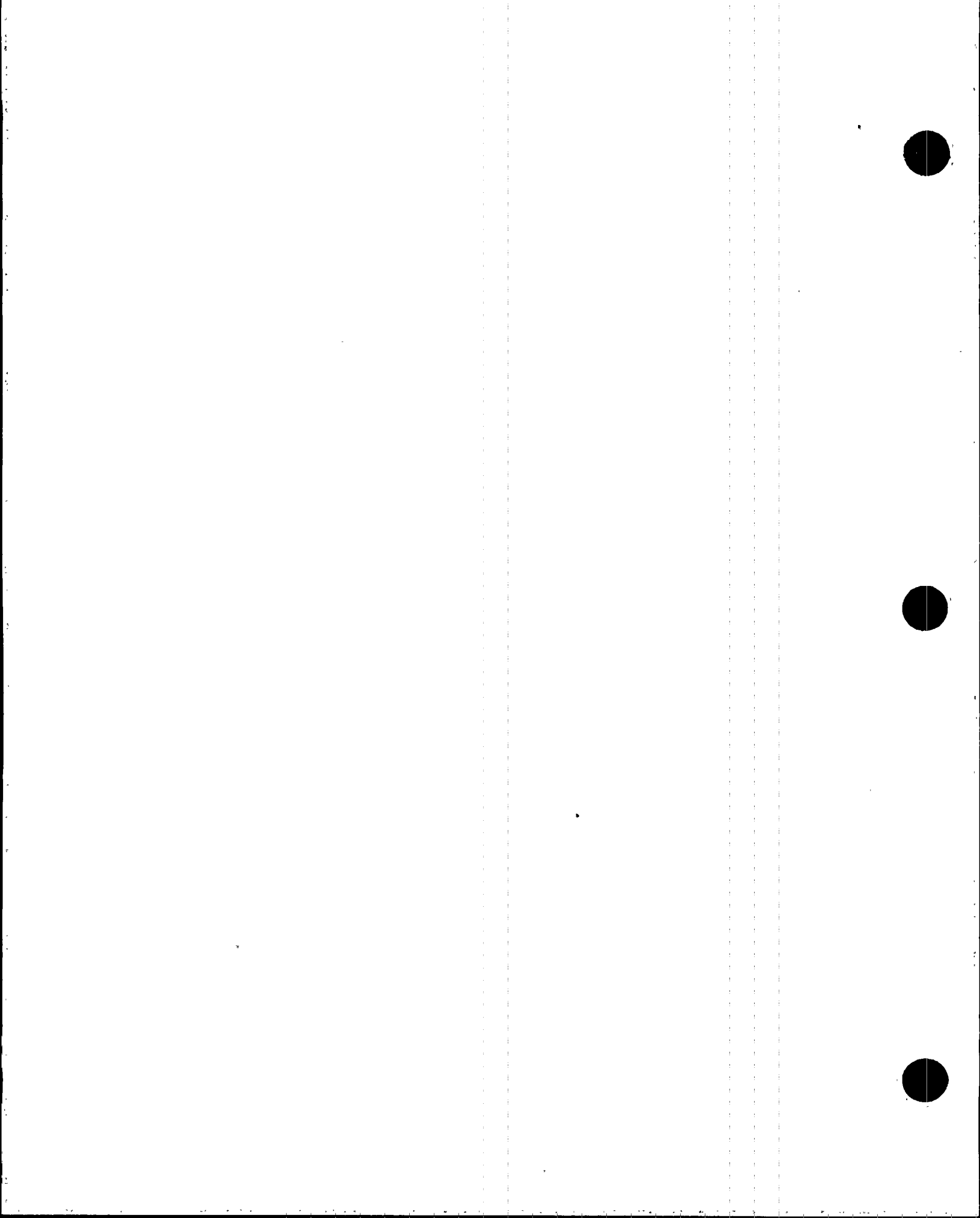


Figure 26



Coverage For Probe Angle=45 Deg; Probe Skew=90 Deg (CP-SGPON)

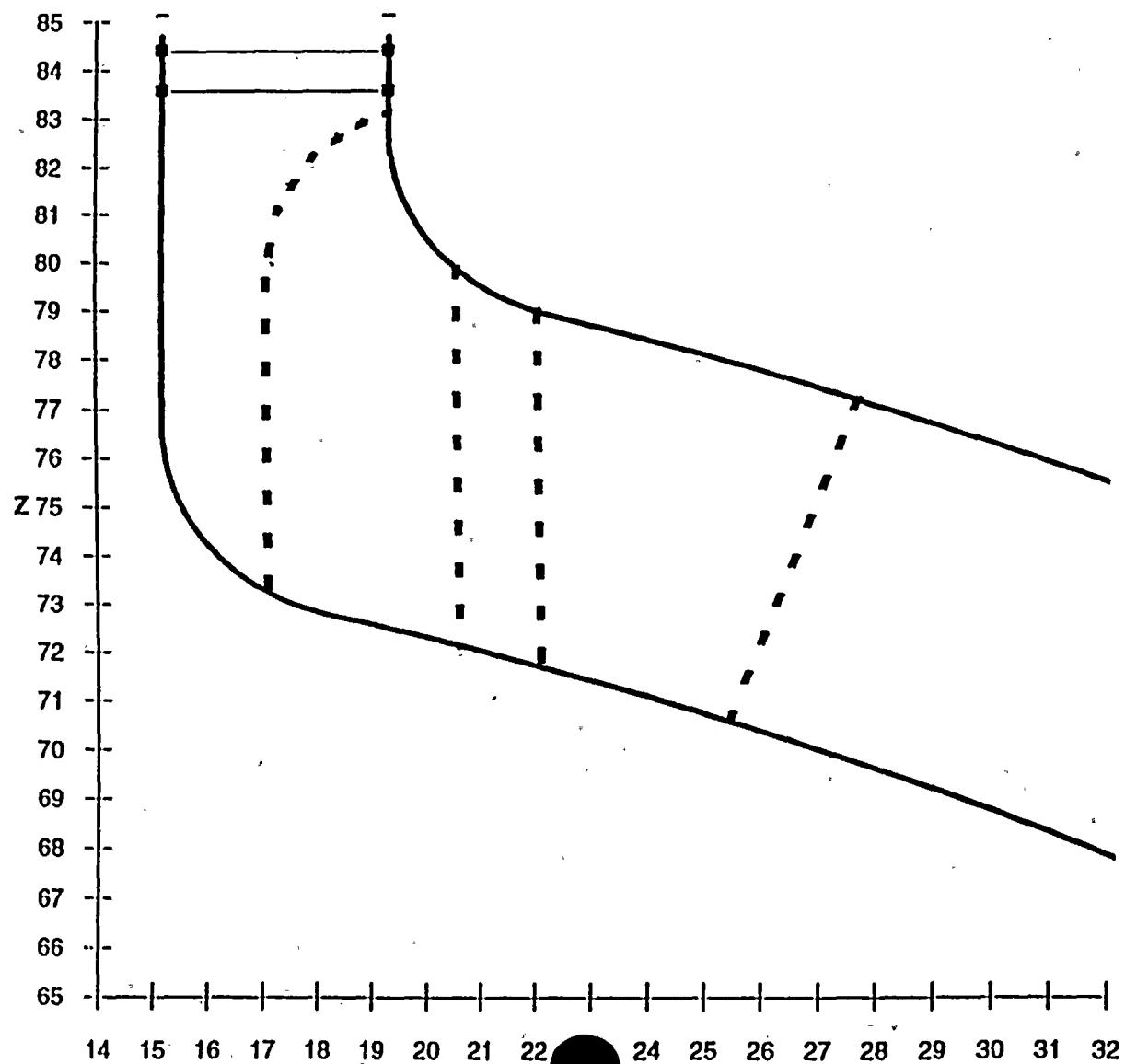
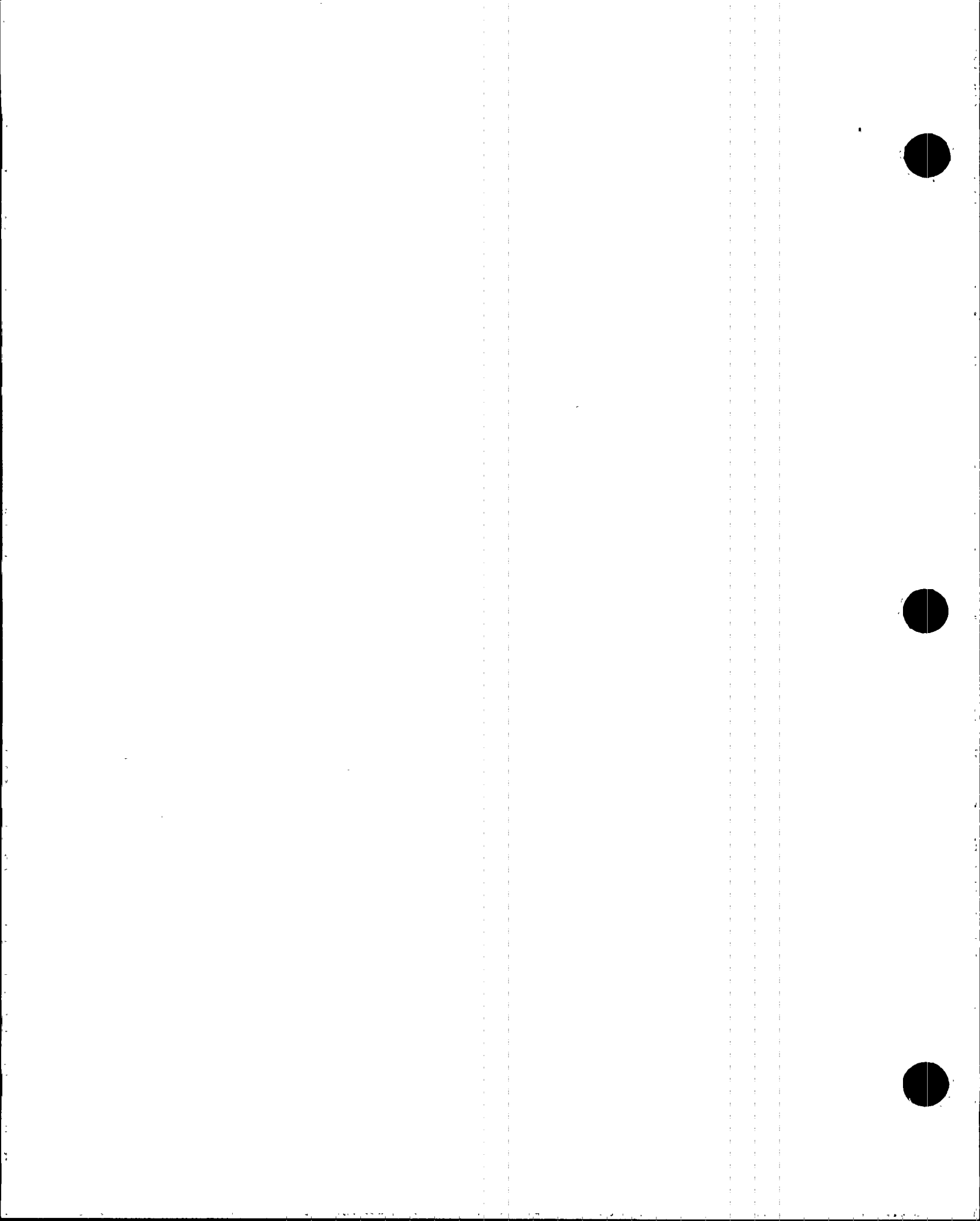


Figure 27



Coverage For Probe Angle=60 Deg; Probe Skew=90 Deg (CP-SGPON)

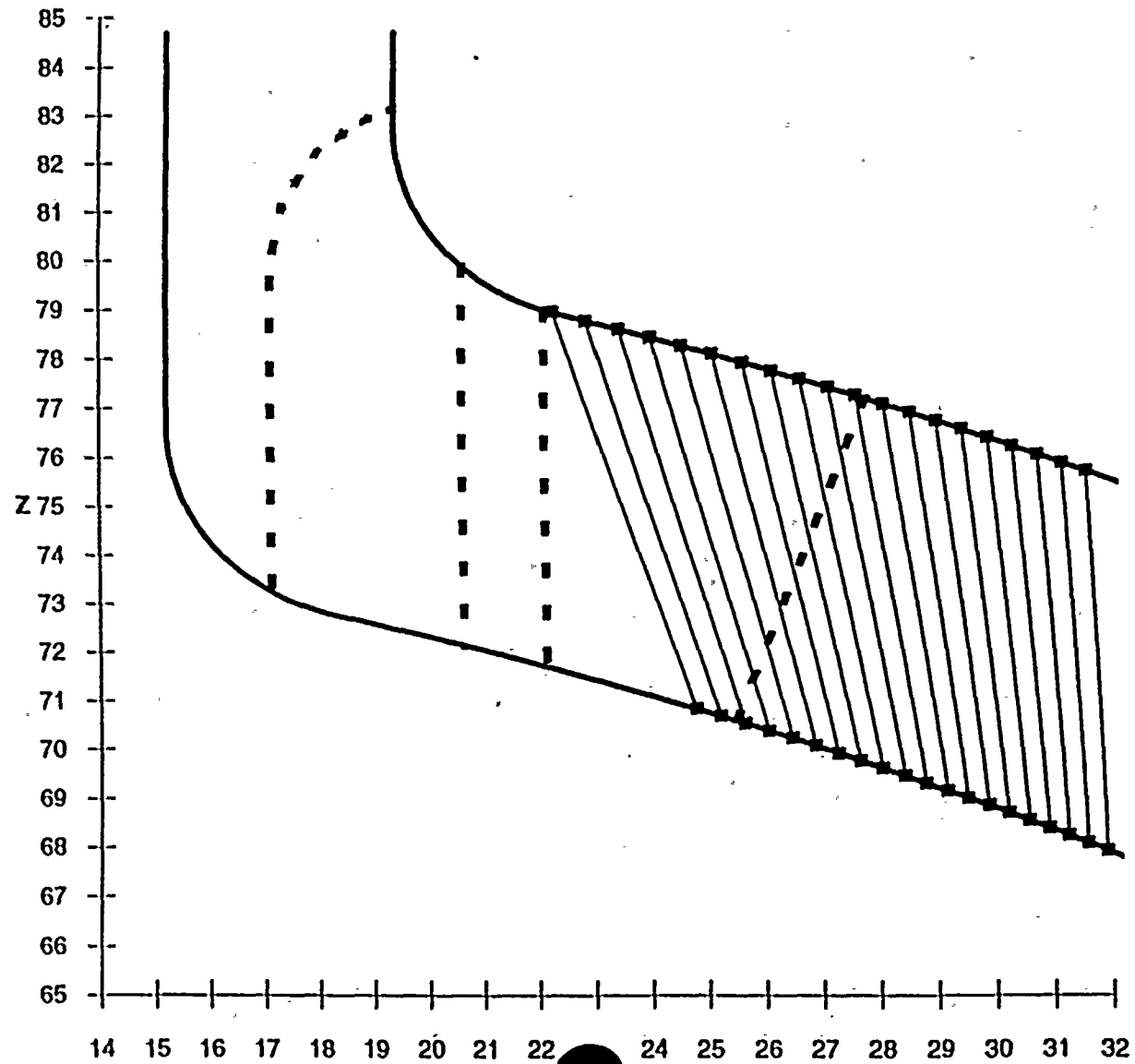
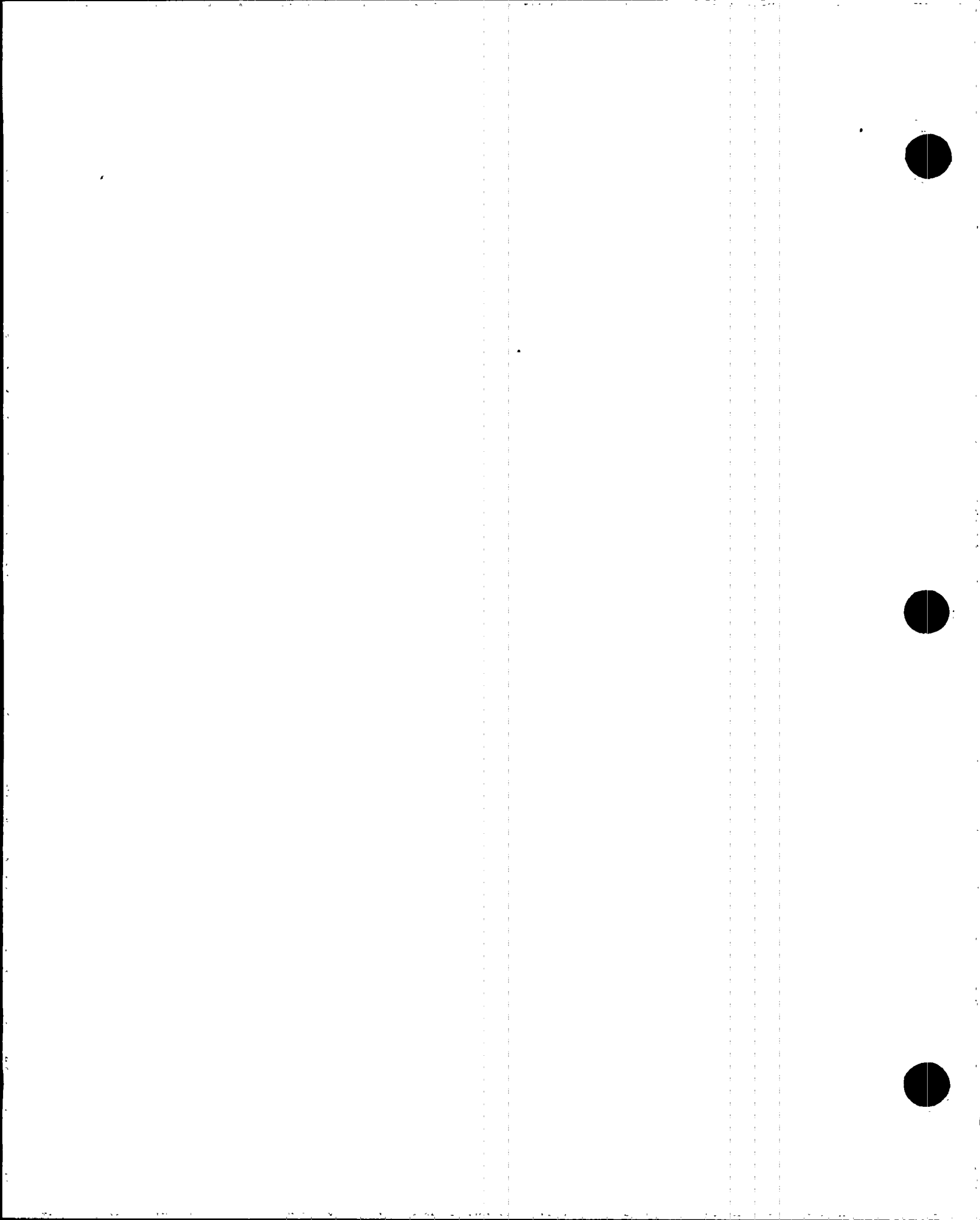


Figure 28



Coverage For Probe Angle=60 Deg; Probe Skew=90 Deg (CP-SGPON)

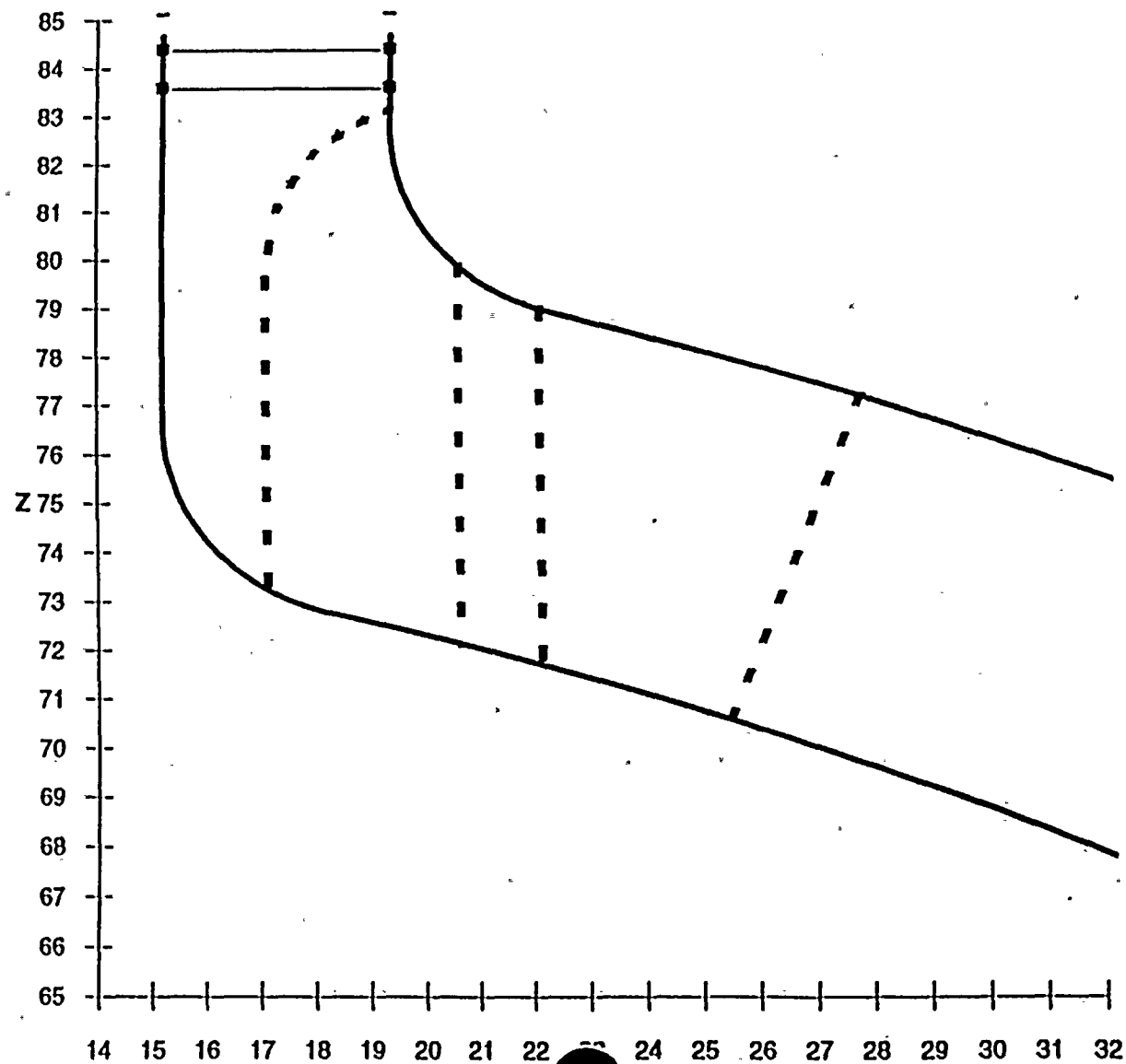
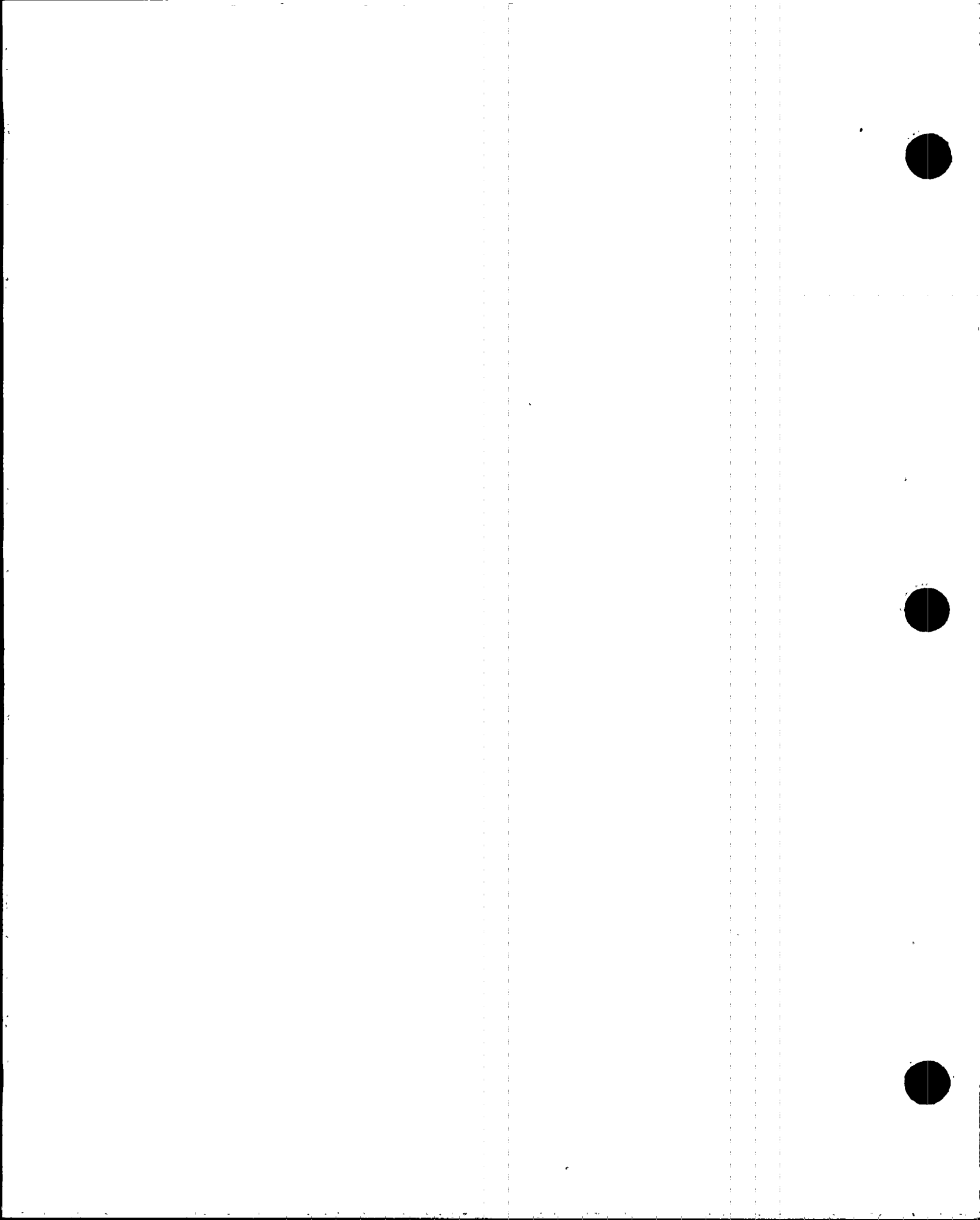


Figure 29



Combined Coverage (CP-SGPON)

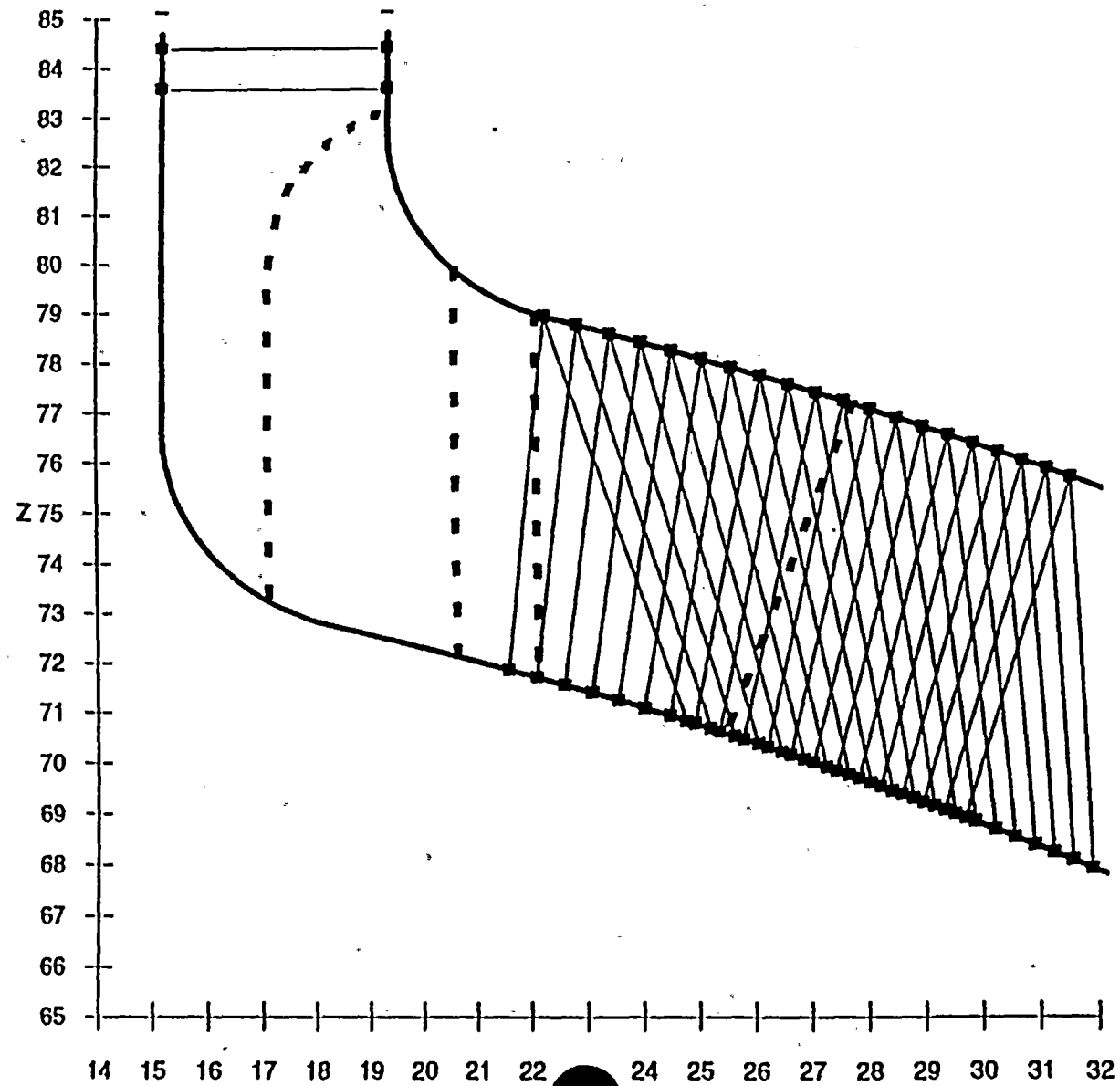


Figure 30

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Table 8. Coverage Table: SG Outlet; 45° and 60° probes scanned transversely on vessel head and nozzle boss (+/-20° probe skewing).

Probe Angle	45°	45°	60°	60°
Probe Skew	70°	110°	70°	110°
Probe Location	Head	Boss	Head	Boss
% Exam Vol. (C-D-E-F) Covered	100%	0%	100%	0%
% Exam Vol. (B-C-F-G) Covered	80%	0%	59%	0%
% Exam Vol. (A-B-G-H-I) Covered	8%	0%	0%	0%
Percent Total Weld Exam Volume (A-B-C-D-E-F-G-H-I) Covered	54%	0%	47%	0%

Summary

The 35° contoured probe gives 100% coverage for the inner radius regions of both the SG inlet and outlet nozzles (See Tables 1 and 5). Table 9 summarizes the coverage of the nozzle-to-head weld for the SG inlet nozzle (See Tables 2 and 4).

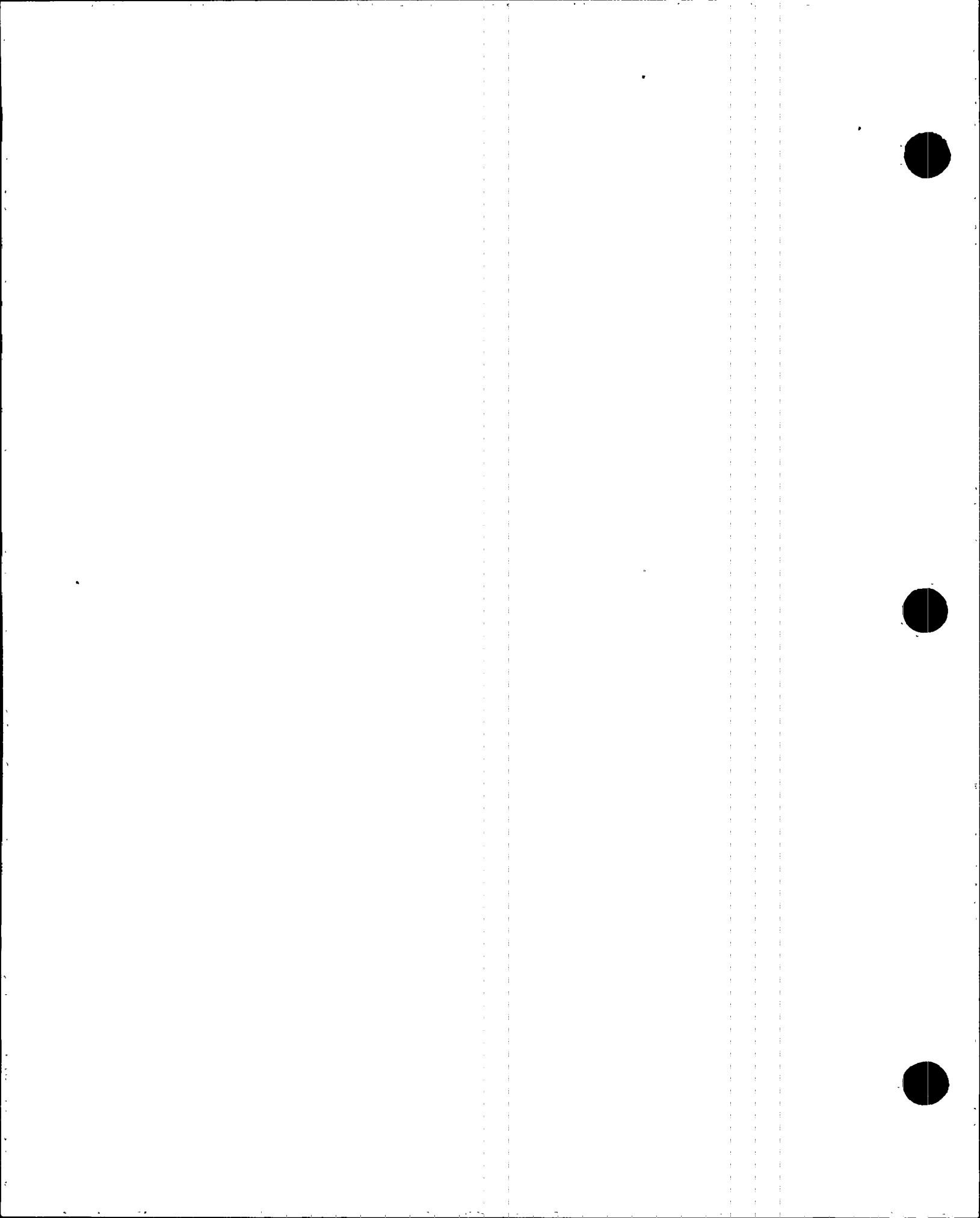
Table 9. Summary Coverage Table: SG Inlet Nozzle-to-Head Weld.

Probe Angles	45° & 60°	45° & 60°	45° & 60°	45° & 60°
Probe Skew	0°	180°	70°	110°
Probe Location	Head	Boss	Head	Boss
Percent Coverage	79%	0%	63%	0%

Table 10 summarizes the coverage of the nozzle-to-head weld for the SG outlet nozzle (See Tables 6 and 8).

Table 10. Summary Coverage Table: SG Outlet Nozzle-to-Head Weld.

Probe Angles	45° & 60°	45° & 60°	45° & 60°	45° & 60°
Probe Skew	0°	180°	70°	110°
Probe Location	Head	Boss	Head	Boss
Percent Coverage	74%	0%	47%	0%



Coverage For Probe Angle=45 Deg; Probe Skew=70 Deg (CP-SGPON)

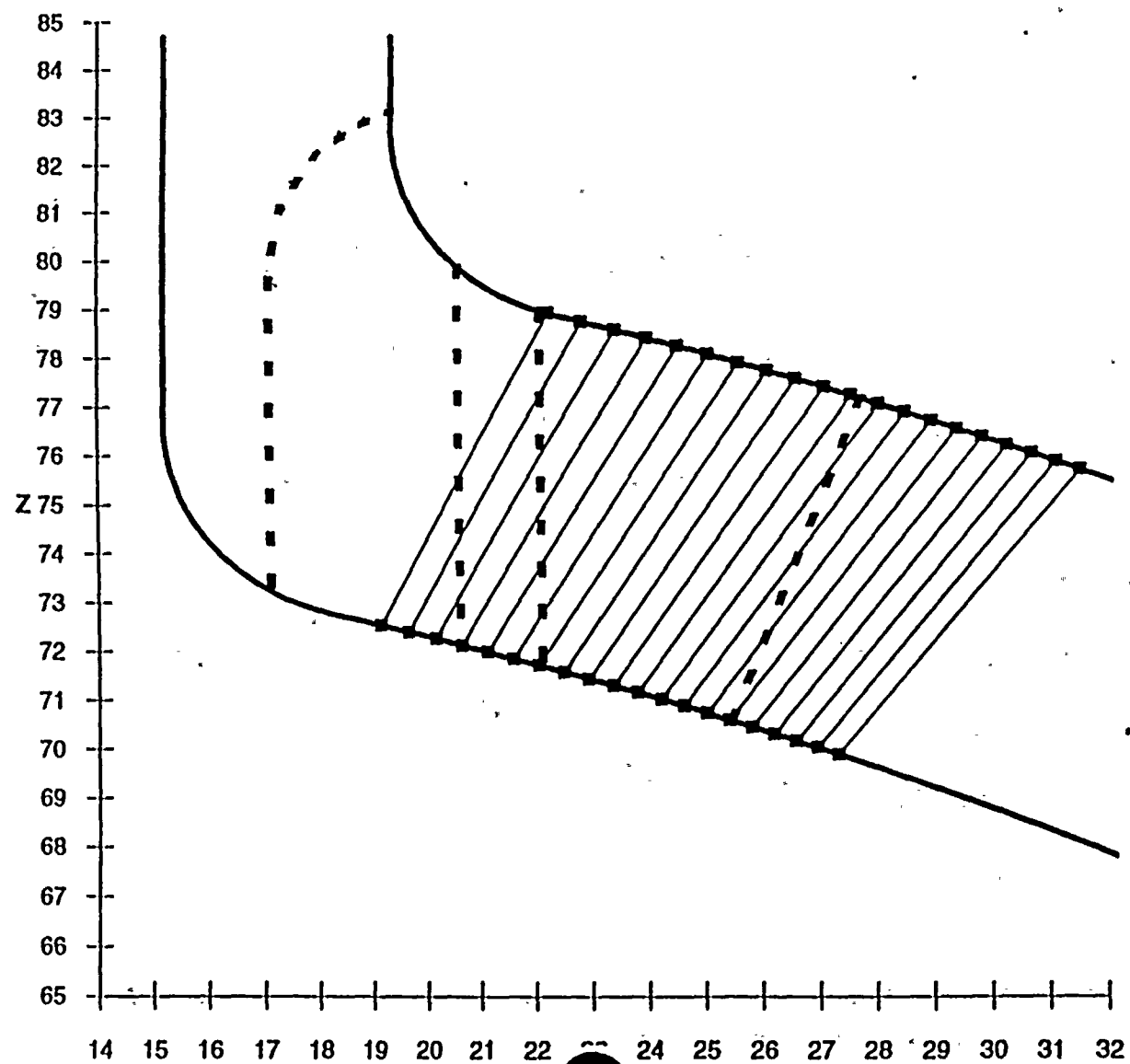
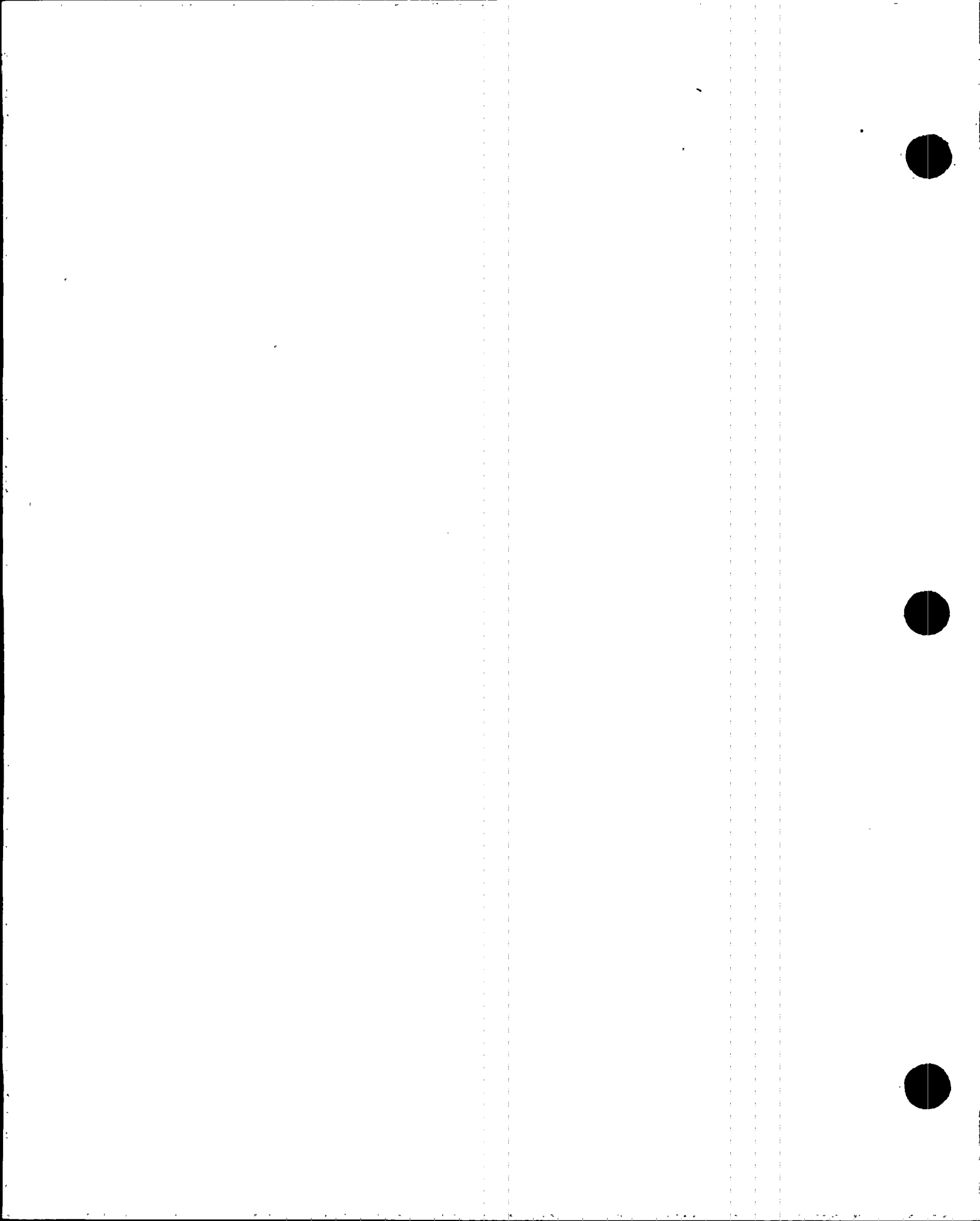


Figure 31



Coverage For Probe Angle=45 Deg; Probe Skew=110 Deg (CP-SGPON)

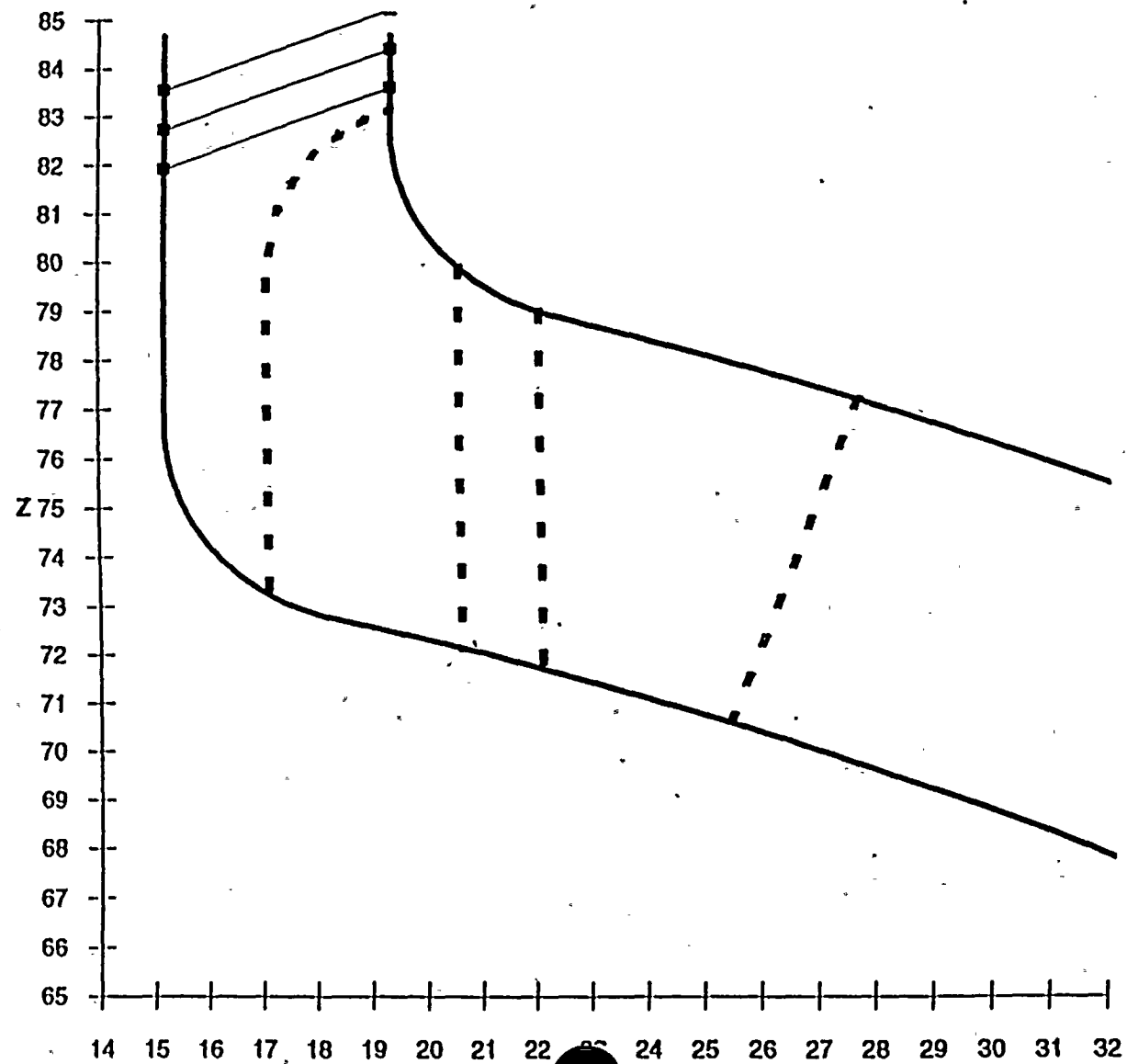
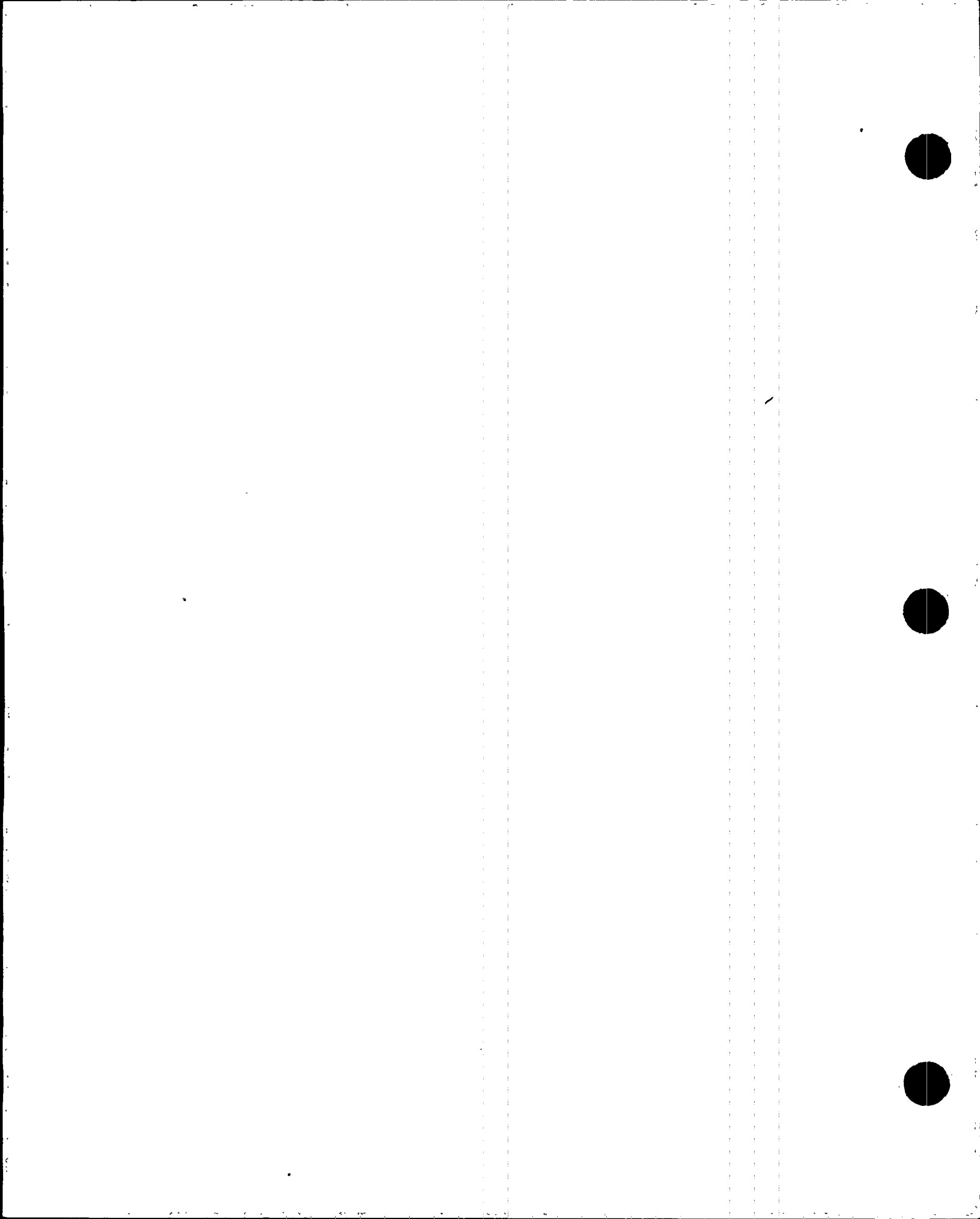


Figure 32



Coverage For Probe Angle=60 Deg; Probe Skew=70 Deg (CP-SGPON)

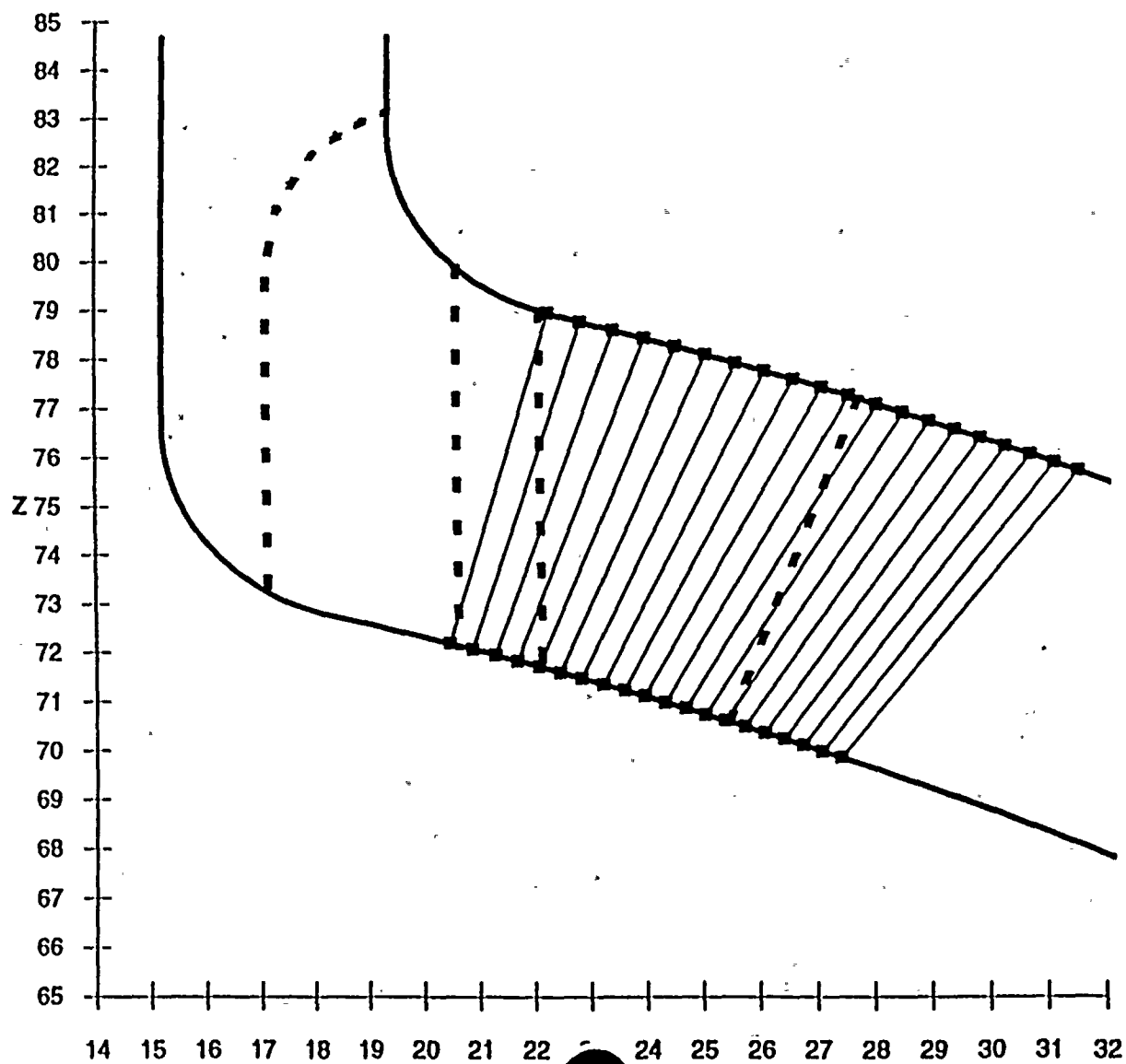


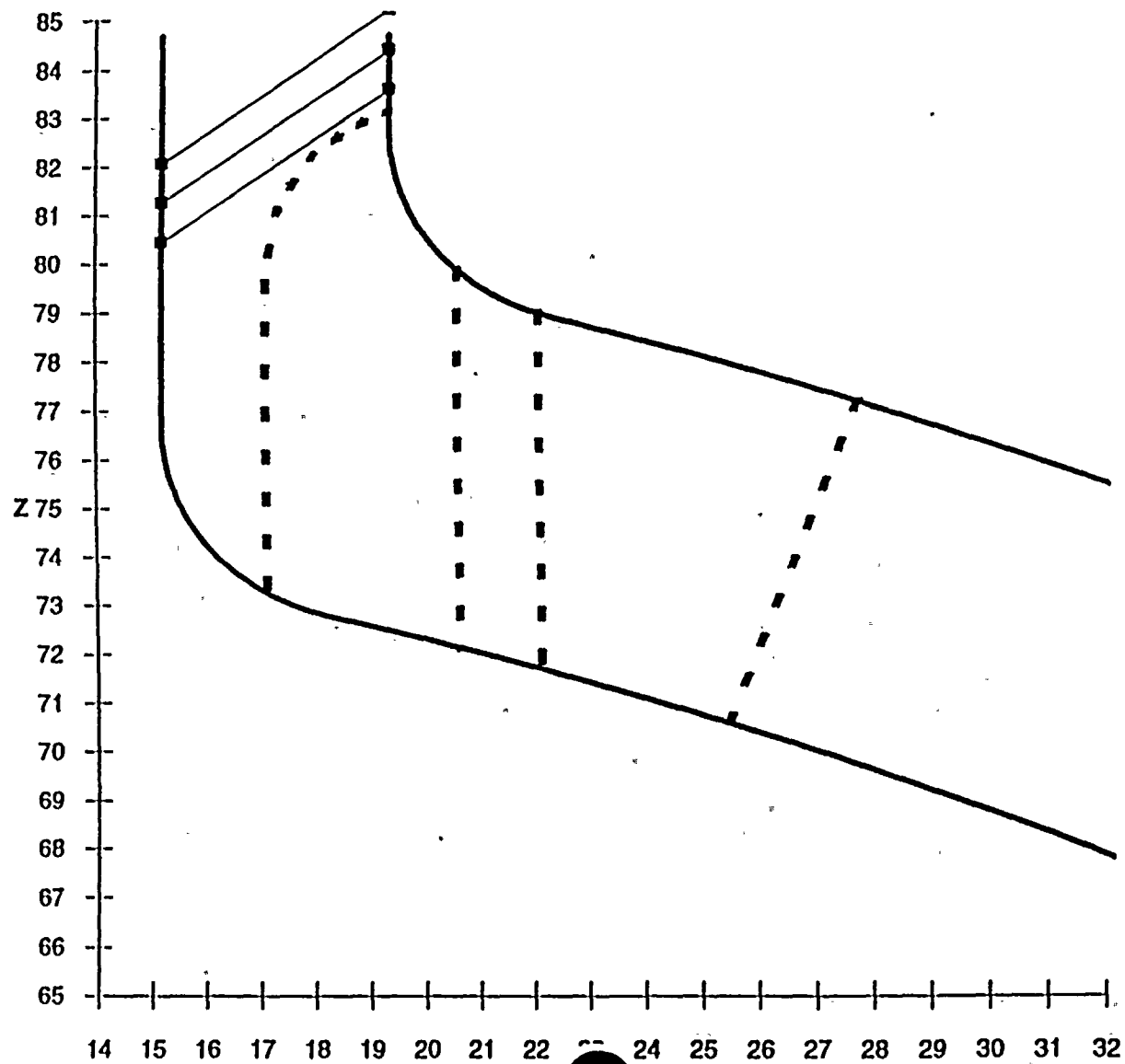
Figure 33

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Coverage For Probe Angle=60 Deg; Probe Skew=110 Deg (CP-SGPON)



Combined Coverage (CP-SGPON)

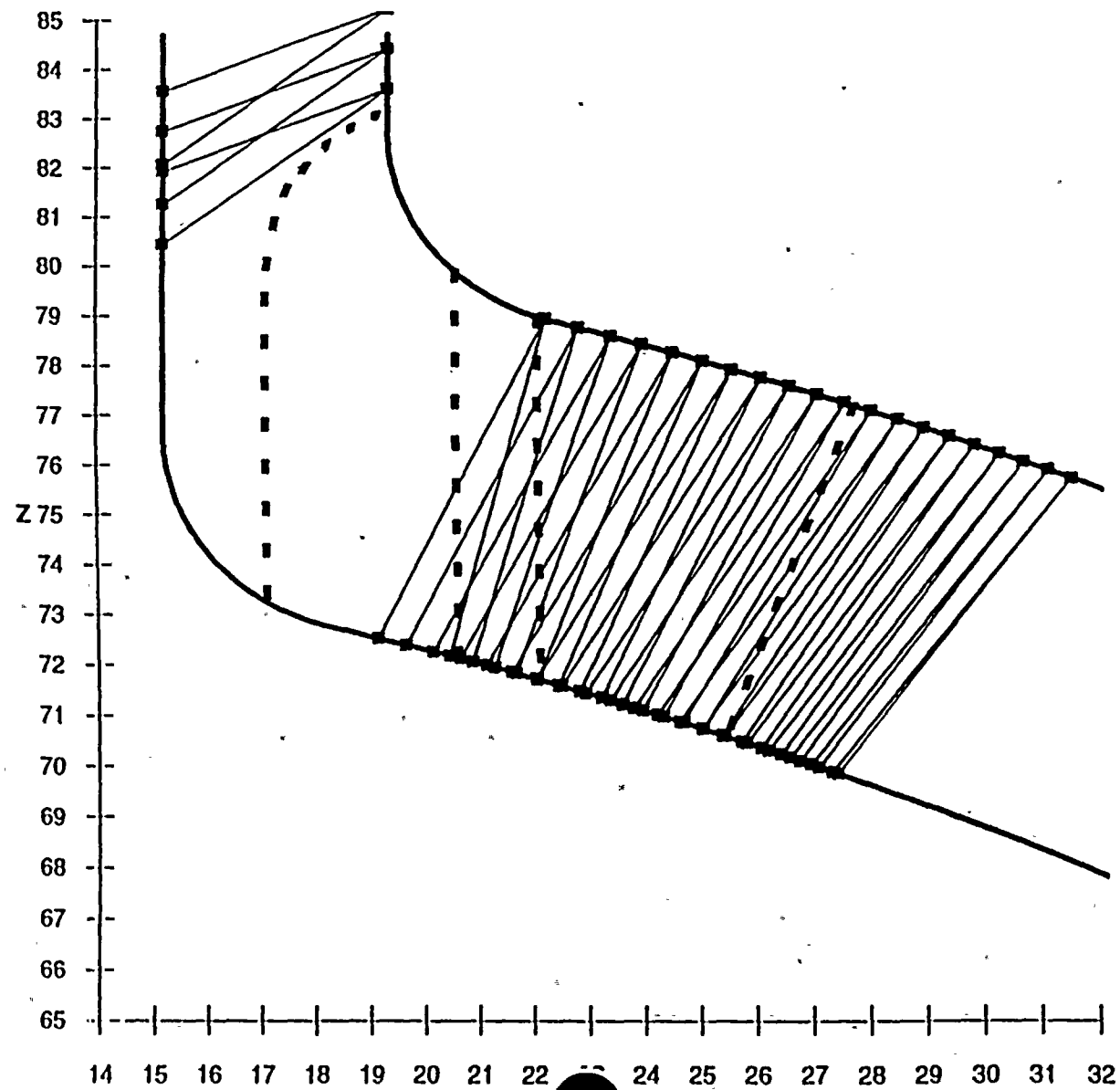
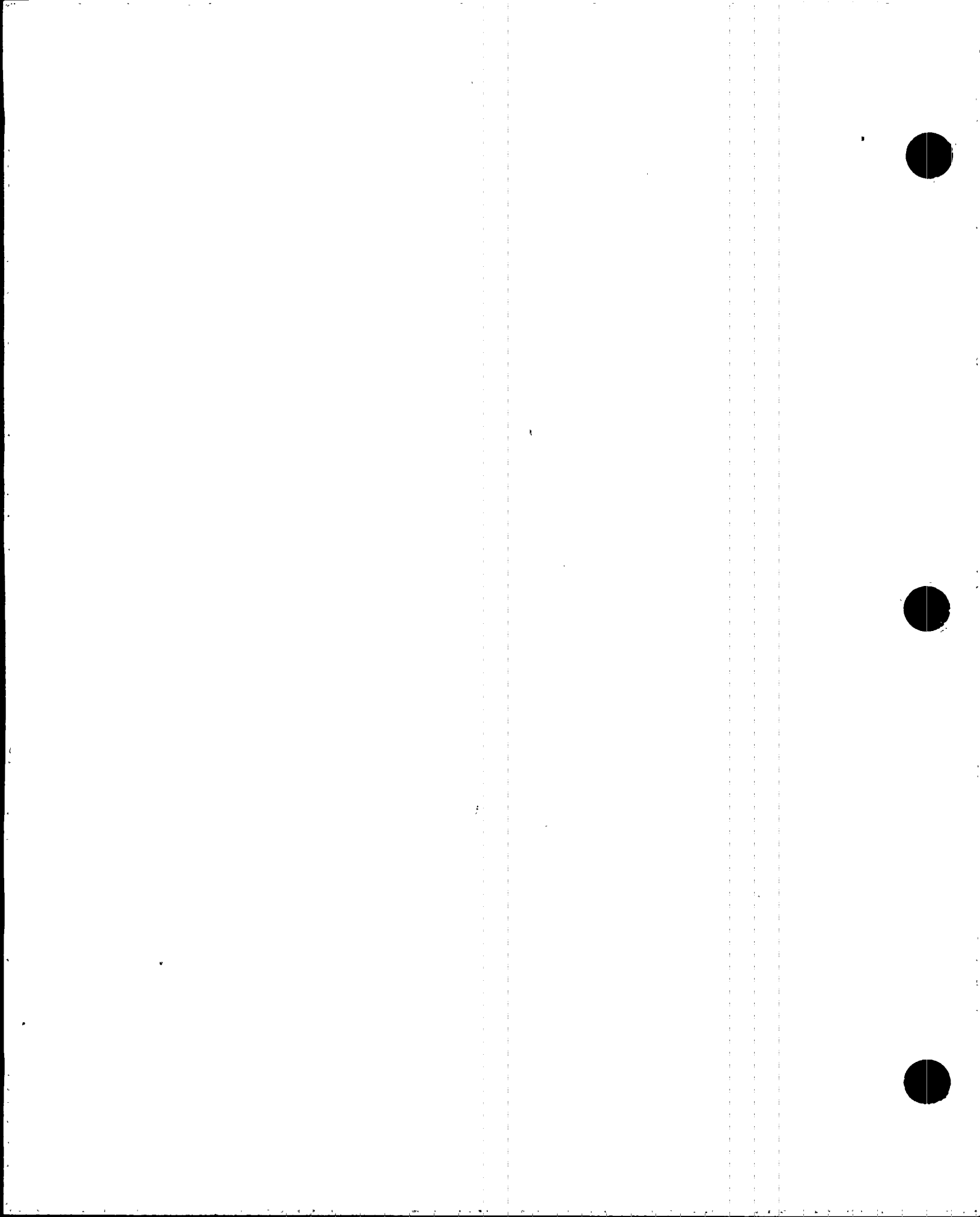


Figure 35

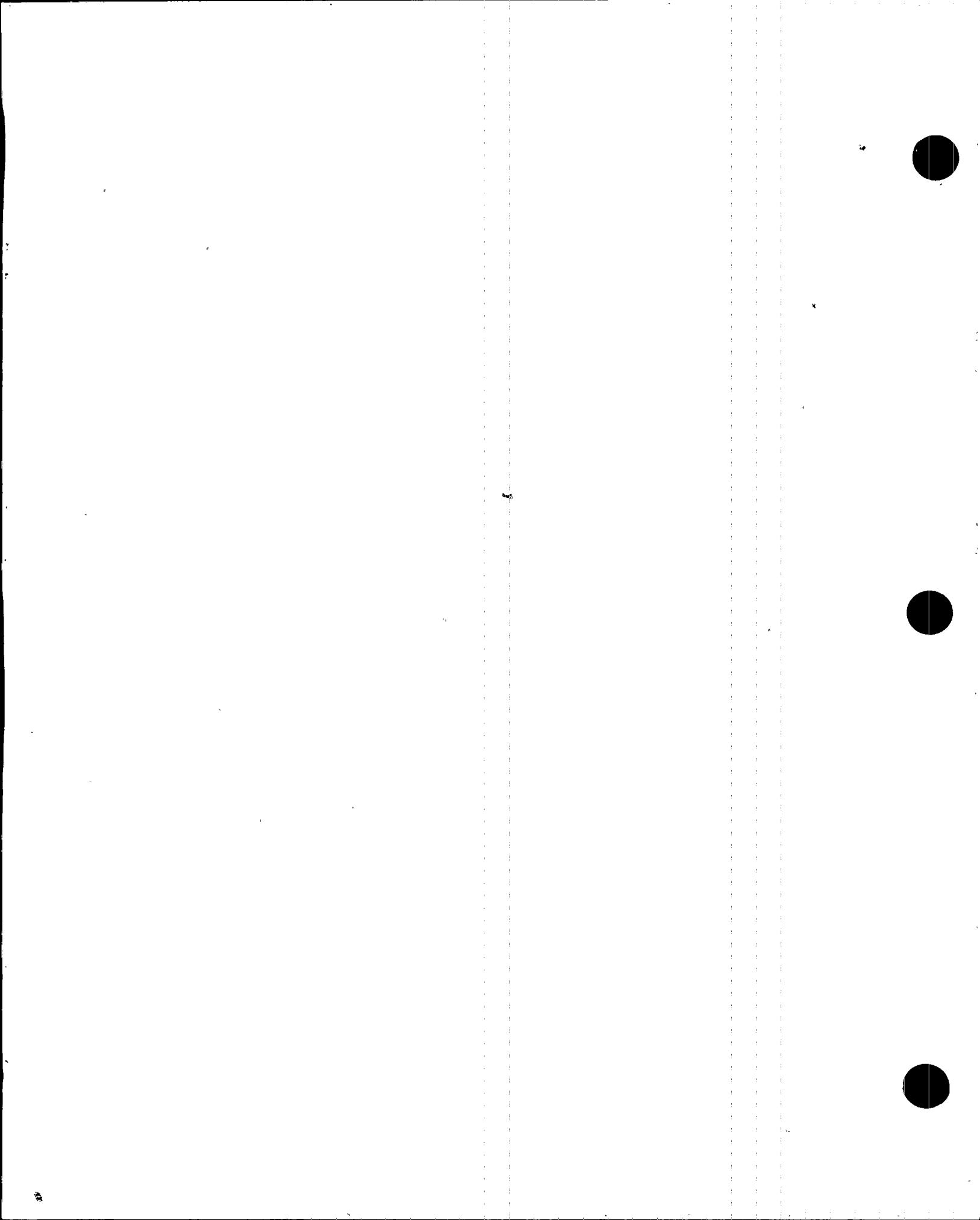


ATTACHMENT 2

**CONSUMERS ENERGY COMPANY
PALISADES PLANT
DOCKET 50-255**

INSERVICE INSPECTION PROGRAM - RELIEF REQUEST NO. RR-4

DRAWINGS RSG90-C251-001 and RSG90-C251-003



ATTACHMENT 3

**CONSUMERS ENERGY COMPANY
PALISADES PLANT
DOCKET 50-255**

INSERVICE INSPECTION PROGRAM - RELIEF REQUEST NO. RR-9

2.Pages

RELIEF REQUEST NUMBER - RR-9

COMPONENT IDENTIFICATION

Code Class	1
Code Reference	IWB-2500 Table IWB-2500-1
Examination Category	B-D
Item Number	B3.90, B3.100
Component Description	Reactor Vessel Nozzle to Vessel Welds 5-114A, 5-114B, 5-114C, 5-114D, 5-114E, 5-114F and Inside Radius Sections 5-114A-IRS, 5-114B-IRS, 5-114C-IRS, 5-114D-IRS, 5-114E-IRS, 5-114F-IRS .

CODE REQUIREMENTS

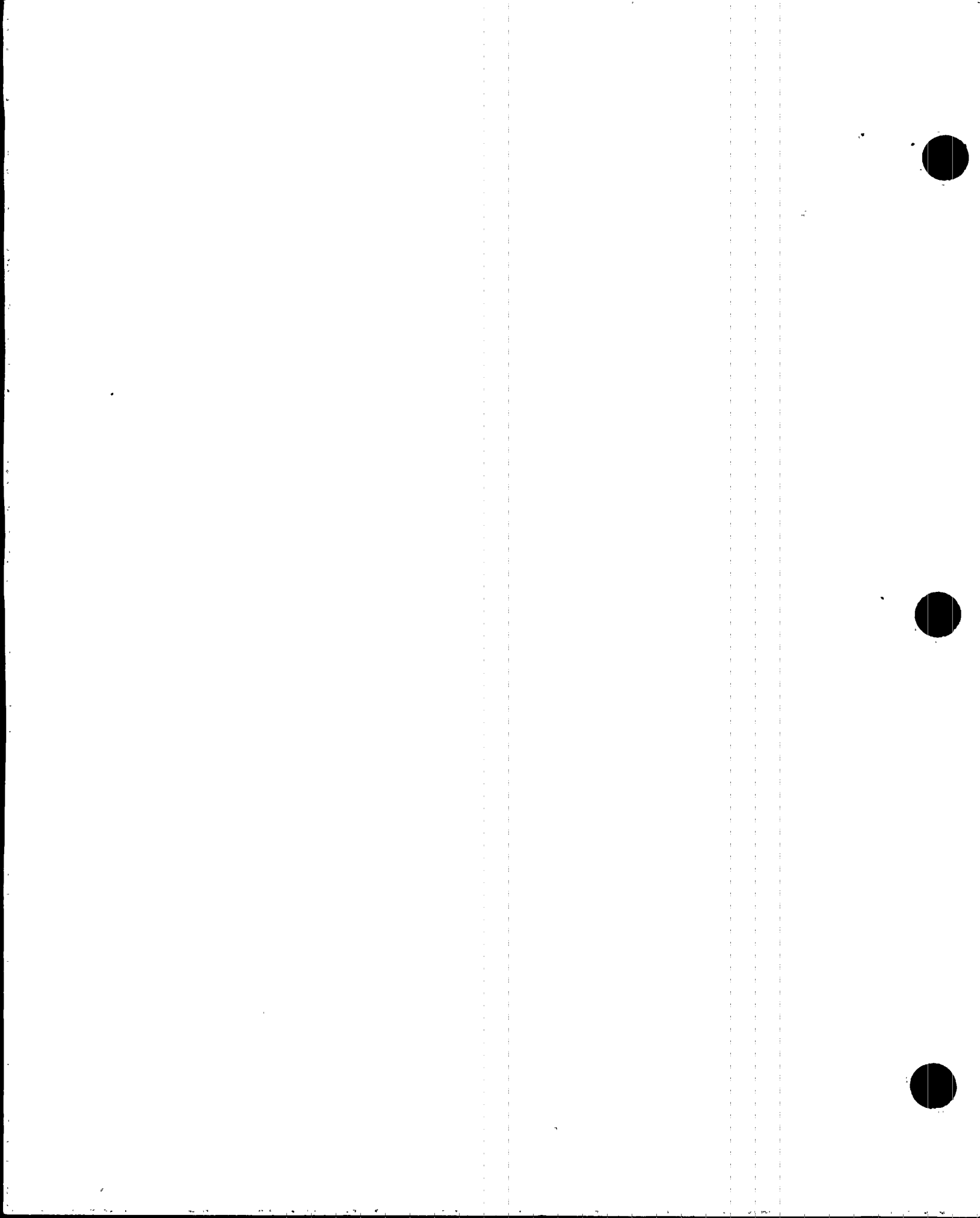
Table IWB-2500 requires that nozzle to vessel and inside radius section welds shall be volumetrically examined with a schedule to consist of at least 25% but not more than 50% (credited) of the nozzles be examined by the end of the first period, and the remainder by the end of the inspection interval. Relating to deferral of inspections, the nozzle to vessel welds are deferrable to the end of the interval provided the examinations are conducted from inside the component and the nozzle weld is examined by straight beam ultrasonic method from the nozzle bore, the remaining examinations required to be conducted from the shell inside diameter may be performed at or near the end of each inspection interval. The inside radius section welds are not deferrable to the end of the interval.

BASIS FOR RELIEF

Pursuant to 10 CFR 50.55a(a)(3) and Footnote 6, the use of the following code case is requested as a relief request.

Code Case N-521 allows the examination schedule for the identified welds and inside radius sections to be deferred to the end of the inspection interval provided the welds have not been repaired or replaced, the welds do not contain identified flaws or relevant indications that currently require successive inspections in accordance with IWB-2420(b) and the unit is not in the first inspection interval.

Additionally, all identified welds and inside radius sections were examined during the 1995 refueling outage. This was the second examination of the interval for the outlet nozzles and inside radius sections. The 1995 refueling outage was the last outage of the second inspection interval. Therefore, granting approval of this relief request would not extend any examinations beyond a ten year interval.



RELIEF REQUEST NUMBER - RR-9 (Contd)

PROPOSED ALTERNATE EXAMINATION

Examination records for the nozzle to vessel and inside radius section welds have been reviewed to verify compliance to the conditions in the code case. No repairs, replacements or flaws or relevant indications have been identified with the plant currently in the beginning of the third inspection interval.

Therefore, the twelve welds will be scheduled to be volumetrically examined during the 2005 outage of the third period of the third interval.

