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August 13, 1979

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

Dear Sir:

Three Mile Island Nuclear Station Units 1 & 2 (TMI-1 and TMI-2)  
License Nos. DPR-50 and DPR-73  
Docket Nos. 50-289 and 50-320  
Radiation Protection Organization

Met-Ed has continued its effort to meet the commitments of our 7/18/79 letter (GQL 0909) as modified by our 8/6/79 letter (GQL 1018). At our 8/10/79 meeting with Mr. White and Mr. Crocher of your staff, items pertaining to the overall Radiation Protection Program organization were presented to meet the 8/10/79 commitments identified in GQL 1018. The specific status of each item identified in our 8/6/79 letter (GQL 1018) is presented below.

1. The following items were presented to your representatives at the 8/10/79 meeting. Copies of the formal documents are enclosed.
  - a. Revised Radiation Protection Program Organization Chart. Fig. 1
  - b. Descriptions of the specific responsibilities of each functional area identified on the Radiation Protection Program Organization Chart.
  - c. The individuals responsible and the lines of responsibility for each functional area are described in (a) and (b) above.
  - d. A plan view chart of Units 1 and 2 which delineates the geographic areas of responsibility for each unit.
2. Met-Ed is continuing the review of the adequacy of the Q.A. program as it relates to providing for regular audits of the Radiation Protection Program by individuals who are independent of the day-to-day radiological protection activities. Documentation of the review will be completed by 8/15/79.
3. The procedure for the control of High Radiation Areas was reviewed by the Plant Operations Review Committee with changes which include your staff's comments of 8/3/79. A copy of the approved procedure was provided to Mr. White of your staff on 8/7/79.

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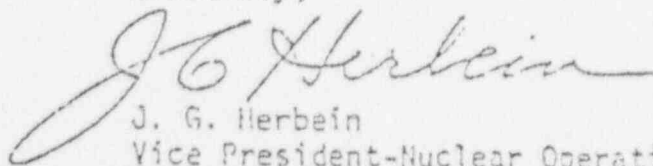
4. The procedure for evaluating air sample results with respect to beta-gamma ratios and beta energies was implemented by a Temporary Change Notice (TCN) on 8/3/79. The TCN was presented to Mr. White of your staff with an explanation which addressed the comments received from your staff.
5. a) Health Physics Procedure "Internal Dosimetry/Bioassay Program" (HP 1628) describes the subject program and has been revised to incorporate the guidance provided in ANSI N-347, Reg. Guide 8.15 and NuReg 0041.

A procedure (HP 1628.1) for implementing the Internal Dosimetry/Bioassay Program described in HP 1628 has been prepared which contains action levels for whole body counting and urinalysis for suspected acute and chronic exposures of Sr-89 and Sr-90.

Procedures HP 1628 and HP 1628.1 are presently undergoing review by the Plant Operations Review Committee.
- b) Health Physics Procedure "Respiratory Protection Program" (HP 1616) has been expanded in the form of an implementing procedure (HP 1616.4) which includes a detailed air sample analysis sequence with action levels specified when airborne concentrations of Sr-89 and Sr-90 (based on Cs levels) are measured. This procedure (HP 1616.4) is presently undergoing review by the Plant Operations Review Committee.
- c) The calculation of MPC hours for airborne concentrations of radioactivity has been included in Health Physics Procedure "RWP Procedure" (HP 1613) and in an implementing procedure "MPC Hours" (HP 1616.5).

Procedures (HP 1613 and HP 1616.5) include the requirement for a periodic review of air sample results. Both of these procedures are presently undergoing review by the Plant Operations Review Committee.
- d) Procedures specifying the care, use, and cleaning of the respiratory protection devices available, tritium air sampling and overall respiratory program implementation are presently undergoing review by the Plant Operations Review Committee.
- e) Health Physics Procedure "Air Test Booth" (HP 1717) has been revised and is presently undergoing review by the Plant Operations Review Committee.
- f) A training program for IIP foremen and technicians will be accomplished so that the comprehensive bioassay program will be implemented by 17 August 1979.
6. A procedure providing for ALARA review and evaluation of potential exposures of individuals to concentrations of airborne radioactive materials, as required by 10 CFR 20.201(b), will be reviewed and approved by August 17, 1979.

Sincerely,



J. G. Herbein  
Vice President-Nuclear Operations

Mr. B. H. Grier, Director

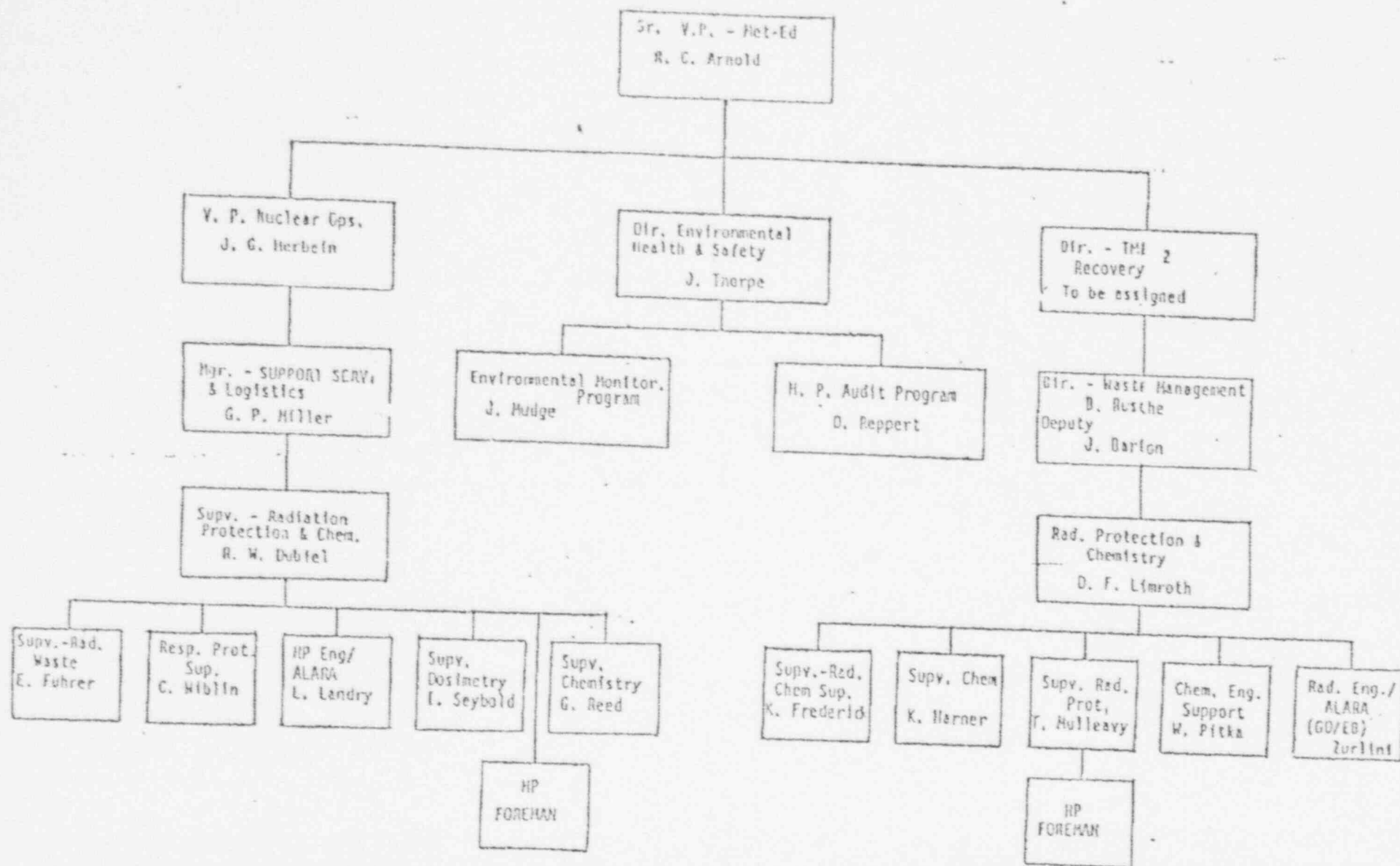
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August 13, 1979

cc: R. C. Arnold  
J. Barton  
R. W. Dubiel  
D. F. Limroth  
G. P. Miller  
J. Mudge  
D. Reppert  
J. R. Thorpe

Enclosures

# THE STATION HEALTH PHYSICS ORGANIZATION



5 SPECIFIC RESPONSIBILITIES OF FUNCTIONAL AREAS

A. Support Services and Logistics - Radiation Protection and Chemistry

1. Supervisor-Radiation Protection and Chemistry
2. Supervisor-Dosimetry
3. Respiratory Protection Supervisor
4. Chemistry Supervisor-Unit 1
5. Radiological Engineering/ALARA Unit 1
6. Supervisor-Rad Waste Unit 1
7. HP Foreman Unit 1

B. Environmental Health and Safety

1. Environmental Monitoring Program
2. H.P. Audit Program

C. Waste Management Activity - Radiation Protection and Chemistry

1. Radiation Protection and Chemistry Group Head
2. Radiochemistry Supervisor
3. Radiation Protection Supervisor
4. Chemistry Supervisor
5. Radiological Engineering/ALARA - Unit 2
6. Chemistry Engineer Support - Unit 2
7. H.P. Foreman - Unit 2

SUPPORT SERVICES AND LOGISTICS  
RADIATION PROTECTION AND CHEMISTRY

Within the Operating Staff of Unit 1 is established a major group with the mission of providing radiation protection and chemistry support.

The organization of the Radiation Protection and Chemistry group is illustrated in Figure 1. Under the group head are:

1. Supervisor-Radiation Protection and Chemistry
2. Supervisor-Dosimetry
3. Respiratory Protection Supervisor
4. Chemistry Supervisor - Unit 1
5. Radiological Engineering/ALARA - Unit 1
6. Supervisor - Rad Waste - Unit 1
7. H.P. Foreman - Unit 1

1. Supervisor - Radiation Protection and Chemistry

The head of the Radiation Protection and Chemistry Department reports to the Manager, Support Services and Logistics. Reporting to him are the heads of the six sub-groups listed above. Direct liaison is also conducted with the Director, Waste Management Activity and the Radiation Protection and Chemistry Supervisor of the Waste Management Group for the coordination of station-wide Radiation Protection and Chemistry policy.

The incumbent is responsible for the overall coordination and performance of personnel assigned and specifically for ensuring that the Radiation Protection function is accomplished in full compliance with 10 CFR 20 (and other such regulations issued by competent authority and approved procedures) and the management of all chemistry functions associated with Unit 1 in accordance with the Unit's Technical Specifications and primary and secondary water chemistry and radiochemistry procedural requirements. The incumbent is also responsible for the implementation of Station Health Physics support functions (such as Dosimetry, Bioassay, etc.) for both Unit 1 and Unit 2. The incumbent is the normal point of contact in dialogue with representatives of the Nuclear Regulatory Commission in matters of radiological concerns Unit 1.

2. Supervisor-Dosimetry

Responsible to both Radiation Protection and Chemistry Supervisors for the complete Internal and External Dosimetry program including the supervision of all personnel in the dosimetry group.

The major functions include:

Dose Assessment

The dose assessment section is responsible for evaluations, calculations, and investigations of dosimetry results to assure that proper data is used to determine each individual's dose. These people are also responsible for maintenance and delivery of the self-reader reports.

### External Dosimetry

This section is responsible to the Supervisor-Dosimetry for proper control and maintenance of the TLD system. This function includes TLD issue, reader operation, system calibration TLD Anomaly investigation and liaison with on-site organizations.

### Internal Dosimetry

This section includes implementation of the internal dosimetry program, sample collection and delivery, report, review and evaluation and computer input.

### 3. Respiratory Protection Supervisor

Conducts a program designed to maintain the effectiveness and adequacy of respiratory protection. Program review includes: wearer acceptance, examination of respirators in use, evaluation of protection afforded, correlation of MPC - hours with measured doses, and records. Writes or reviews procedures to implement the requirements of NRC Regulatory Guide 8.15 and NuREG-0041. Establishes liaison among the various departments that support the activity.

### 4. Chemistry Supervisor - Unit 1

The Chemistry supervisor is responsible for the coordination and performance of those personnel reporting directly to him which includes one Chemistry Foreman and Met-Ed Rad-Chem Technicians.

The Radiochemistry supervisor will normally be qualified for this position in accordance with ANSI N18.1 - 1971.

Specifically, this position is responsible for:

The management of the water chemistry sample and analysis program within Unit 1 including both auxiliary and plant systems.

The selection, supervision, set-up and calibration of all chemical analytic equipment/systems.

The development or technical review of new chemistry procedures to meet emergent requirements or to improve those in use.

The identification of training requirements for personnel assigned including the actual conduct of training which will be coordinated with the station Training Department.

The technical supervision of the operation of the water and waste treatment systems of Unit 1.

The maintenance of chemistry records and reports required by procedures under his cognizance and/or by state or federal agencies.

Other duties assigned by the Radiation Protection and Chemistry Group Head.



The sampling and analysis and reporting of non-radioactive waste water discharges in accordance with the station's NPDES (National Pollution Discharge Elimination System) permit.

5. Radiological Engineering/ALARA - Unit 1

Assist in the planning, design and control of work in support of the ALARA principles by providing recommendations, guidance and/or review in the following areas:

- Facility/Work space layout and arrangement
- Traffic/Material Flowpaths
- Shielding
- Remote indicating or monitoring equipment
- Ventilation requirements in support of respiratory protection
- Special tools/equipment to reduce or minimize exposure
- Contamination/radiological control techniques
- Drafting or review of procedures concerned with radiation protection and radiological controls.
- Other duties as may be assigned by the Radiation Protection and Chemistry Group Head.

6. Supervisor Rad Waste - Unit 1

Responsible for the operation of the solid radwaste systems in Unit 1 including solidification of concentrated liquid waste and compacted trash.

Responsible for insuring compliance of all radwaste activities with Technical Specifications, procedures and Federal and State regulations.

Responsible for the coordination with Waste Management Activities for the shipment of Unit 1 radioactive waste from the site.

Responsible to write or review procedures for the handling and packaging of waste material in Unit 1 to insure compliance with the regulations.

Responsible for engineering modifications to radwaste systems to insure proper, efficient and economical operation.

7. H.P. Foreman - Unit 1

Responsible to the Supervisor Radiation Protection and Chemistry for supervision of technicians in:

1. Laboratory counting and support - Unit 1
2. Health Physics operations and monitoring (RWP usage, job coverage)
3. H.P. Training - Unit 1
4. Radiological surveys



## ENVIRONMENTAL HEALTH AND SAFETY

Within the Corporate Staff is established a major group with the mission of providing environmental monitoring services and an H.P. audit program.

### 1. Environmental Monitoring Program

Responsible to the Director of Environmental Health and Safety for maintenance and review of the environmental surveillance program, ALARA review of effluent program and the reports related to the programs.

### 2. H.P. Audit Program

Responsible to the Director-Environmental Health and Safety for the Radiation Protection QA audit program.

## WASTE MANAGEMENT ACTIVITY-RADIATION PROTECTION AND CHEMISTRY

Within the Waste Management Activity is established a major group with the mission of direct operational and technical support of all facets of radiation protection and chemistry associated with Unit 2 recovery operations.

The organization of the Radiation Protection and Chemistry Group is illustrated in Figure 1. Under the group head are:

### Line Functions

- Radiochemistry Supervisor
- Chemistry Supervisor
- Radiation Protection Supervisor

### Support Functions

- Radiological Engineering and ALARA
- Chemistry Support Engineering
- Material Expediting

The functional responsibilities of these major sub-groups are enumerated below.

#### 1. Radiation Protection and Chemistry Group Head. The Head of the

Radiation Protection and Chemistry Group reports to the Director, Waste Management Activity. Reporting to him are the heads of the six sub-groups listed above. Direct liaison is also conducted with the Manager, Support Services and Logistics, TMI Nuclear Station, for the coordination of station-wide radiation protection and chemistry policy and for matters involving requisite station support functions (i.e. dosimetry, respiratory protection and generic radiation protection training).

The incumbent is responsible for the overall coordination and performance of personnel assigned and specifically for ensuring that the radiation protection function is accomplished in full compliance with 10 CFR 20 (and such other regulations issued by competent authority and approved procedures) and the management of all chemistry functions associated with Unit 2 in accordance with standard technical specifications and primary and secondary water chemistry and radiochemistry procedural requirements. The incumbent is the normal point of contact in dialogue with the representatives of the Nuclear Regulatory Commission in matters of radiological concerns affecting Unit 2.

#### 2. Radiochemistry Supervisor

The Radiochemistry Supervisor is responsible for the coordination and performance of those personnel reporting directly to him which include sample coordinators, sample compilers, and those contractor personnel who operate and maintain the various radiochemistry counting laboratories at TMI as a result of the Unit 2 accident. The Radiochemistry Supervisor will normally be qualified in accordance with ANSI 18.1 - 1971.

Specifically, this position is responsible for:

The selection, supervision and calibration of all radiochemistry analysis and counting equipment.

The establishing and day-to-day conduct of a quality assurance program to ensure the highest standards of radiochemistry laboratory results (excluding field or portable equipment).

The development or technical review of new radiochemistry procedures necessary to fulfill emergent requirements.

The identification of training requirements for personnel assigned, including the actual conduct of such training when the normal station training department or others cannot fulfill this requirement.

The maintenance of radiochemistry records and reports required by procedures under his cognizance and/or required by state or federal agencies.

Other duties assigned by the Radiation Protection and Chemistry Group Head.

The functions of the groups for which the Radiochemistry Supervisor is responsible are enumerated below:

a. Sample Coordinator

Coordinate the sampling effort throughout Unit 2 including ensuring recurring periodic samples are drawn as scheduled, arranging for other samples as requested, ensuring that samples are forwarded to the cognizant laboratory for counting and ensuring that results are received in a timely manner and distributed to cognizant personnel/offices. Implementation of the emergency Sample Procedure. (Z-33)

Implementation of the liquid discharge procedure. (Z-46)

Implementation of the sewage procedure (Z-51). Supervision of those personnel assigned to draw and transport samples to and from Sample Labs. Other duties as assigned or approved by the Radiochemistry Supervisor.

b. Sample Compilers

Compile/composite, store and dispose of samples as directed by the Radiochemistry Supervisor.

c. Contractor Radiochemistry Laboratories

Perform radiochemical analysis as directed by the Sample Coordinator.

### 3. Radiation Protection Supervisor

The Radiation Protection Supervisor is responsible for the coordination and performance of those personnel assigned and especially for that of the contractor radiation protection supervisors and foremen. He is specifically responsible for ensuring that the radiation protection function is accomplished in full compliance with 10 CFR 20 (and such other regulations issued by competent authority and approved procedures.)

Specific responsibilities include:

The review of surveys, including radiation, airborne and surface contamination, to detect trends which would require increased personnel protective measures.

The review and approval for radioactive releases from Unit 2 and, when requested, from Unit 1.

Maintaining close liaison with the Waste Management Activity Disposal Group for purposes of day-to-day review of the handling, storage and shipping of radioactive material. Specifically, the incumbent should review and approve shipping documents.

The calibration of survey and laboratory instruments assigned to Unit 2 in accordance with direction from the radiochemistry supervisor.

The identification of training requirements for personnel assigned and for the monitoring of the quality of training conducted within his subgroup.

The maintenance of records and reports required by procedures, technical specifications and others required by state or federal agencies.

Other duties assigned by the Radiation Protection and Chemistry Group Head.

The preparation or technical review of procedures affecting radiation protection. The incumbent is normally a member of PORC and/or RORC.

### 4. Chemistry Supervisor

The Chemistry Supervisor is responsible for the coordination and performance of those personnel reporting directly to him which includes one chemist, one contractor chemistry laboratory supervisor and Met-Ed rad-chem technicians.

The radiochemistry supervisor will normally be qualified for this position in accordance with ANSI N18.1 - 1971.

Specifically, this position is responsible for:

The management of the water chemistry sample and analysis program within Unit 2 including both auxiliary and plant systems.

The selection, supervision, set-up and calibration of all chemical analytic equipment/systems.

The development or technical review of new chemistry procedures to meet emergent requirements or to improve those in use.

The identification of training requirements for personnel assigned including the actual conduct of training when the normal station's training department cannot fulfill this requirement.

The technical supervision of the operation of the water and waste treatment systems (less those under the cognizance of the Waste Management Activity Processing Section) of Unit 2.

The maintenance of chemistry records and reports required by procedures under his cognizance and/or by state or federal agencies.

Other duties assigned by the Radiation Protection and Chemistry Group Head.

The Chemistry Supervisor shall be responsible for the time sheets for all Met-Ed bargaining unit personnel within the chemistry and radio-chemistry groups.

The functions of the group for which the Chemistry Supervisor is responsible are enumerated below:

- a. The B&W Laboratory Supervisor and technicians are responsible for the maintenance of the B&W chemistry laboratory and for the performance of analyses or other chemistry functions in accordance with approved procedures as directed by the Sample Coordinators.
- b. Met-Ed Rad-Chem Techs are responsible for the maintenance and operation of those chemistry systems assigned to or located within Unit 2 chemistry laboratory and for the conduct of such analyses or other chemistry functions in accordance with approved procedures as may be assigned by the Sample Coordinators or other duly authorized supervisory personnel.

The Chemistry Supervisor will be assisted by a chemist who fills a staff rather than line position; however, direct supervision of personnel within the group may be required from time to time. The Chemist is responsible for:

Assisting management and subordinates in the development, implementation, calibration, and standardization of functional tests, analysis techniques and other programs as may be assigned.

The development of a quality assurance/control program consisting of chemical calibrations and maintenance of instrumentation and, as necessary, periodic audits of the operation of associated systems and techniques and adequacy and accuracy of data.

Assisting the Chemistry Supervisor in the development of budgets, providing pertinent data and information regarding expenditures and projected requirements both for the chemistry and radio-chemistry sections.

The procurement of chemical laboratory equipment and supplies.

The instruction of technicians in review or unusual procedures and/or techniques associated with analytical procedures.

Other duties as may be assigned by the Chemistry Supervisor.

The Chemist will be the normal relief for the Chemistry Supervisor during periods of his absence.

Three staff assistants or groups are assigned within the Radiation Protection and Chemistry Group. Their functional responsibilities are listed below.

5. Radiological Engineering/ALARA - Unit 2

Assist in the planning, design and control of work in support of the ALARA principles by providing recommendations, guidance and/or review in the following areas:

- Facility/Work space layout and arrangement
- Traffic/Material Flowpaths
- Shielding
- Remote indicating or monitoring equipment
- Ventilation requirements in support or respiratory protection
- Special tools/equipment to reduce or minimize exposure
- Contamination/radiological control techniques
- Drafting or review of procedures concerned with radiation protection and radiological controls.

Other duties as may be assigned by the Radiation Protection and Chemistry Group Head.

6. Chemistry Engineer Support - Unit 2

Engineering support, principally that concerned with sampling systems and procedures.

Draft and review procedures concerning sampling and analysis techniques.

Perform quality assurance checks and when directed, supervise the performance of technicians assigned to contractors laboratories.



# UNIT 1 AND UNIT 2 RADIATION PROTECTION PLAN

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FIGURE 2 - 2

