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Office of Nuclear Reactor Regulation

Carlyle Michelson, Director
Office for Analysis and Evaluation
of Operational Data

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Office of Inspection and Enforcement

John Davis, Deputy Director
Office of Nuclear Material Safety
and Safeguards

FROM: William J. Dircks, Acting Executive
Director for Operations

SUBJECT: INTERIM PROCEDURES FOR REVIEW OF REACTOR
OPERATIONAL DATA

In order to facilitate AEOD reviews of operational data and to coordinate the activities of the NRC offices responsible for review of operational data, the interim procedure listed below shall be implemented immediately. For the longer term the AEOD, with the assistance of other involved NRC offices, is directed to develop the NRC Manual Chapter entitled, "Operational Safety Data Review Procedures."

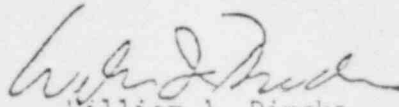
1. The AEOD shall be on distribution for reports, correspondence, and evaluations of operating events including LERs, Preliminary Notifications, Staff Evaluations, Inspection Reports and Meeting Notifications.
2. In cases where the information collected on an operational event is insufficient for AEOD review purposes, the appropriate licensing office shall provide timely support of AEOD requests for added information. AEOD should contact appropriate individuals in other offices within the NRC (including regional and/or site personnel) when it determines that additional information is necessary on a particular event. Such contacts are not expected to pose a heavy burden on available resources. If priority or resources problems develop, however, they should be brought to the attention of appropriate management for resolution.

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3. It is recognized that there will be instances that may require AEOD staff to make direct contact with NSSS, AEs, vendors and licensees. Whenever such a need is identified the following procedures should be followed:
 - a. Outside organizations, such as NSSS vendors, architect-engineers, and/or manufacturers, which do not immediately involve a licensee can be contacted directly by AEOD.
 - b. Normally, the initial contact with a reactor licensee concerning a particular event should be established through the NRR Project Manager (PM). Thereafter, direct communications between the licensee staff and AEOD can be expected. When NRR or I&E do not participate in such communications, AEOD should keep those offices informed of discussions with licensees in order to minimize overlap and duplication.
4. When it is necessary to acquire an official position, finalized or verified technical information, or significant information which will be cited and used in the record, AEOD will make a formal request through the NRR PM. The NRR PM should promptly forward this request to the licensee for action, and initiate necessary followup actions to ensure that a complete response is obtained and forwarded to AEOD.
5. AEOD will not give guidance or direction or make any formal requests to individuals or organizations contacted, beyond requests for information.
6. AEOD should promptly inform NRR and IE of any significant matters it identifies during the course of its data collection and assessment activities.
7. IE and NRR should inform AEOD when significant investigations into operational events are initiated in order to help assure that AEOD concerns and areas of interest are properly addressed.
8. Frequent meetings shall be held between management representatives of the program offices chaired by AEOD to improve coordination and review efforts and to promptly identify any evolving technical or communication problems. AEOD, IE, NRR and NMSS shall identify the appropriate management representatives.

I consider AEOD functions to be of the highest importance, and I intend to give them my personal attention. Problems encountered in implementing these procedures should be brought to me immediately for resolution.



William J. Dircks
Acting Executive Director
for Operations

INTERIM PROGRAM PLAN

OFFICE FOR ANALYSIS AND EVALUATION OF OPERATIONAL DATA

PURPOSE

The purpose of this interim program plan is to summarize present plans concerning office organization, program activities, and resource requirements associated with the Office for Analysis and Evaluation of Operational Data (AEOD).

BACKGROUND

In January 1979, the General Accounting Office (GAO) summarized the results of their evaluations on the NRC's review and use of experience and data from licensed activities in a report ^{1/}to the Chairman. The GAO reported that the NRC had no systematic, defined, or dedicated program to analyze and feedback to NRC activities, to licensees, and to the nuclear industry the lessons of experience. In March, the TMI-2 accident occurred and subsequent investigations found that two similar events had occurred previously. It was likely that had the TMI-2 operators been aware of these events and understood the implications and possible lessons learned, actions might have been taken to prevent core damage.

In February 1979, the Commission requested a briefing on the NRC's program and requirements for operational data collection, assessment, and feedback. The Commission was briefed on the subject in April at which time the EDO appointed a task force to investigate this program in-depth and report to the Commission its recommendations for improvements. In June 1979, the task force recommended to the Commission, among other actions, that an agency-wide office be established to support the program offices by analyzing and feeding back the lessons of operational experience. On July 12, the Commission approved the formation of the Office for Analysis and Evaluation of Operational Data (AEOD) reporting to the EDO, and directed that other offices also have the capability to analyze operating experience.

^{1/}GAO Report, EMD-79-16, dated January 26, 1979 - Reporting Unscheduled Events at Commercial Nuclear Facilities: Opportunities to Improve NRC Oversight.

AEOD was established initially as an interim office in October 1979. The permanent Director was appointed in January 1980, and he reported in February. Because AEOD was established only recently, the organizational structure, programs, and procedures are not yet final. Thus, the details and assessments provided in this plan on the present and future direction of office activities should be considered preliminary.

SITUATION AND NEED

The collection, assessment, and feedback of operating experience are an important and integral part of the overall NRC charter to protect public health and safety. Although programs existed to assess operating experience, recent studies highlighted a need for substantial improvement. In response, the Commission established AEOD to overview the functions from an agency standpoint, perform independent reviews, and assure effective feedback of lessons learned to NRC regulatory activities and licensee operations. The operational safety data includes LERs, inspection reports, construction deficiency reports, Part 21 reports, and required reports on personnel overexposures, radiological releases, property damage, safeguards, and security events; but does not include nonsafety-related data such as that associated with plant availability, nonradiological environmental items or economics.

AEOD is to coordinate and be the focal point for the agency's operational data assessment activities. Other offices including NRR, NMSS, IE, RES, SD, MPA, IP, and SP, also participate in the NRC operational data analysis program.

MAJOR OBJECTIVES

The AEOD overall goal is to systematically collect, review, analyze, and feedback operating experience to NRC licensing, standards, and inspection activities and to licensees for all NRC-licensed activities. This will be done using an integrated program which involves participation by licensees; nuclear industry elements such as NSSS vendors, NSAC, and INPO; foreign governments and industry;

the ACRS; and the NRC. This includes assuring that appropriate corrective action is taken in response to the feedback and communication of information to the concerned parties.

This overall goal is further defined by the following more specific AEOD objectives:

- Identify needed operational data and propose data reporting methods and systems.
- Seek trends or patterns, and otherwise identify potential safety problems or precursors of more serious events.
- Analyze and evaluate operational data to identify situations or events that pose an unrecognized potential for public health and safety consequences.
- Develop recommendations for action by other NRC offices for resolution of safety issues revealed by analysis and evaluation.
- Assure that safety concerns inherent in the experience are identified to the appropriate NRC offices, industry, licensees, and the public, and are satisfactorily resolved and implemented.
- Provide guidance and a focal point for coordination of such activities within the NRC and with ACRS, industry, and other groups.

OFFICE ORGANIZATION

The AEOD organizational structure as it now exists is shown in Figure 1. Overall management and supervision is by the Director, assisted by a Deputy Director. Eight lead engineers are being recruited at the GG-15 level to direct and conduct specific activities relating to Plant Systems, Mechanical Components, Reactor Systems, Nuclear Fuels and Radioactive Materials, and Program and Data Management.

Nine additional engineers are being recruited at the GG-12/14 level to provide supporting capability for the designated lead engineers. The secretarial and clerical function will be staffed with up to three persons at the GG-2/8 level.

The total office strength, including the SES Director and Deputy positions, should be at the fully authorized level of 22 by June 1980. The average grade level for the office will be about GG-13.

It is anticipated that once the office is established and technical activities are being routinely conducted, a more structured organization will be defined, and efforts will be initiated to expand the staff to include other specialists and recent graduates with particularly promising potential.

PROGRAM ACTIVITIES

AEOD's responsibilities and functions can be divided into two broad areas:

(A) the technical assessment of operating experience and identification and feedback of the lessons learned, including recommendations for appropriate corrective action; and (B) the development of program guidance documents, data management activities, and other activities directed toward assuring that the overall NRC program for operational data assessment is defined, systematic, and operating effectively. These two areas are discussed individually in the following sections:

A. Technical Assessment of Power Reactor Operational Data

The sequence of screening, characterization, analysis, and evaluation of power reactor operational data and information within AEOD is shown in Figure 2. Basically, the sequence followed involves:

1. Assuring that formally reported and supplemental operational data and information are received by AEOD, assembled into review packages, and distributed to selected engineers for screening and, when appropriate, coordinated with other offices.

2. Technical review of the data by several individuals differing in technical education and experience, and characterization of each report by predetermined criteria referred to as "watch list" situations. The AEOD Power Reactor Watch List is a documented listing of postulated critical or unusual situations which warrant close watching because of their potential for jeopardizing public health and safety if they were to materialize.
3. A cognizant engineer is assigned to monitor each watch list situation to assure that each entry is collated with historical data and assessed in terms of pertinent operational experience. A specific responsibility of the lead engineer is to weigh the significance and frequency of operating experience for each watch list situation and when the operational experience provides evidence that the situation may be materializing, to recommend the initiation of an intensive engineering analysis, termed a case study.
4. Normally, the decision to implement case studies will be made by the Office Director based upon the recommendations of the cognizant engineer and the advice of the AEOD Power Reactor Review Panel. This review panel is comprised of senior AEOD personnel who bring a broad perspective and knowledge to the review and evaluation of operational data. The compiling of operational data via the watch list allows a concentrated consideration of the significance of the operating information and provides a means for assuring that significant data and events are formally identified for specific engineering assignment via the case study.
5. As noted previously, when operating experience has tended to support or verify the realities of a watch list situation, a case study will be initiated. A case study is an in-depth technical analysis by one or more engineers which will analyze the event in terms of plant design and engineering base, determine the level of safety concern, and the need and possible options for corrective action. The final results

of all case studies will be formally documented and, when appropriate, distributed to other NRC offices, to licensees and industry organizations, and to the Congress and the public. When action is considered warranted, a formal memorandum will be sent to the responsible NRC office with specific recommendations for action.

6. AEOD will monitor the implementation of corrective actions and will assess the effectiveness of its feedback of operational data and case studies to other NRC activities, to licensees and industry organizations, and to the Congress and the public.

The technical assessment of operational data is an ongoing and continuing activity. The level of activity, in terms of case studies initiated and completed, will be a function of the results of screening activities and watch list situation reviews, the significance of the concerns identified, the resources available to AEOD, and the priority of other ongoing activities. It is intended to assure, to the maximum extent possible, that the efforts of AEOD will complement and extend other operational data assessment programs being conducted by other NRC offices. The specifics of the mechanisms for coordination are discussed in the program and data management section.

B. Technical Assessment of Nonreactor Operational Data

AEOD is responsible for the analysis and evaluation of all operational data and information associated with NRC-licensed activities, including those licensed by NMSS. This nonreactor portion of the AEOD program is still in the preliminary planning stage. It will undergo detailed development following the selection of a lead engineer and appropriate supporting personnel.

C. Program and Data Management

A principal AEOD responsibility is to assure that the NRC program is defined, systematic, and effective. Thus, AEOD has initiated a number of activities directed toward developing the necessary guidance documents and lines of communication. The major activities initiated, to date, can be generally grouped into two broad categories: (1) AEOD activities directed at assuring an integrated NRC operational data program; and (2) activities which are directed at improving the collection and processing of operational data

within the NRC and assuring coordination with other organizations. The specific activities falling within these classifications for reactor and nonreactor operational data are listed below and will be implemented or completed by January 1981.

1. Plan, develop, and implement AEOD organizational and administrative activities as part of an integrated NRC operational data program.
 - (a) Establish AEOD at full authorized level; develop work plan; and develop internal procedures.
 - (b) Assure that agency-wide guidance documents are developed, approved, and implemented for trial use.
2. Improve the collection and processing of operational data and information within NRC and with outside organizations.
 - (a) Achieve coordination and establish communication channels with industry organizations (NSAC/INPO).
 - (b) Provide recommended action to the Commission on NPRDS rule-making (SD lead).
 - (c) Obtain foreign operating information on a more regular basis (IP lead).
 - (d) Develop revised reactor event reporting requirements to obtain more uniformity of information concerning significant events.
 - (e) Develop a coordinated and consolidated reactor operational data base(s) to serve the needs of NRC and industry.
 - (f) Feedback the experience gained and lessons learned from operational data in explicit terms and in a more rapid fashion.

As noted in 1(b) above, agency-wide guidance documents are under development. These documents are of two types: a draft manual chapter entitled, "Operational Safety Data Review Procedures" and interoffice memoranda of understanding. The manual chapter includes the scope, objectives, sequence of

actions, and functions of individual offices in terms of the overall agency program. The interoffice memoranda expand the level of detail beyond the manual chapter and define interfaces between offices. The two documents together will define the agency-wide program. The approach being used to develop the documents is to coordinate the drafts with the individual offices and when a high degree of agreement has been reached, issue the documents for trial use. After approximately six months of trial use, it is intended to finalize the manual chapter and request Commission approval.

The activities directed toward improving the collection and processing of operational data and information are in response to the documented need to achieve improvements in reporting (e.g., NUREG-0572 documenting the ACRS review of 3 years of LERs contains numerous recommendations for improving the LER system) and the desire to formulate a coordinated approach with other organizations involved with operational data assessment; for example, to share a common data base, including expanded use of foreign data.

ORGANIZATIONAL ITEMS UNDER STUDY

Besides the program activities identified above dealing with the operational data reporting system, there are a number of organizational items which are under study and whose resolution could potentially affect the scope, function, and required resources of AEOD. These items include:

1. Final resolution of the Special Inquiry Group recommendations involving AEOD:
 - AEOD recommendations for actions should be required to be rejected, modified, or imposed as recommended by the appropriate program office of NRC within a fixed period of time.
 - NRC staff functions devoted to performing quantitative risk assessment of reactors should be relocated in AEOD.
 - AEOD should be staffed, in part, on a rotational basis from all other offices and branches of the NRC staff.
 - AEOD staff level should be no less than 35 to 40 professionals.

2. Determination of the most efficient organizational arrangement for specific activities directly involving AEOD. These items and the office now performing them include:

MPA

- Maintaining automatic data storage and retrieval system for licensee event reports and abstracts, including data file development, maintenance, quality control, data search and retrieval, and reports production.
- Providing coordination of Abnormal Occurrence determinations and preparation of public notices and the quarterly reports to Congress.
- Providing NRC technical direction to the Nuclear Power Reliability Data System (NPRDS) and distributing NPRDS data to NRC users.
- Developing and issuing annual and bimonthly publications such as nuclear power plant experiences and power reactor events in order to effectively feedback operational safety experiences.

RES

- Serving as NRC's technical director of the NSIC work involving the data bank, dissemination of operating experience abstracts and reports, and preparation of state-of-the-art experience reports.
- Performing evaluations of plant systems, components, and accident sequences using operational experience data in order to determine potential generic problems and assess risk implications.

SD

- Serving as NRC's technical director of a contract to ANL for the development of an incident/accident data file for fuel cycle facilities.

3. Implementation of the SIG and ACRS recommendation that AEOD have the capability to perform human factors evaluations. RES has several studies in progress directed at human factor considerations and is devoting in-house resources to this subject area. In addition, NRR has placed increased attention and priority on human factors related subjects and has established an organizational capability.

A high priority has been placed on assuring an early and effective AEOD technical assessment capability; therefore, these items are being assessed on a lower priority. Until the technical assessment capability is established and routine technical studies are well underway, organizational items will not be studied in-depth, and, thus, recommended resolution of these items is not expected for 6 months or more.

RESOLUTION OF ISSUES

When situations develop where differences exist in policy or adequacy of action to assure public health and safety between AEOD and other NRC offices, discussions will be held between the two offices at the Office Director level in an attempt to resolve the difference. If the matter cannot be resolved, the issue will be forwarded to the EDO for resolution. The EDO may decide that the matter warrants Commission attention and discussion because of the nature of the policy issue or the potential significance of the matter. The normal approach will be to attempt to resolve differences at the lowest organizational level commensurate with the urgency, importance, and nature of the matter.

REQUIRED RESOURCES

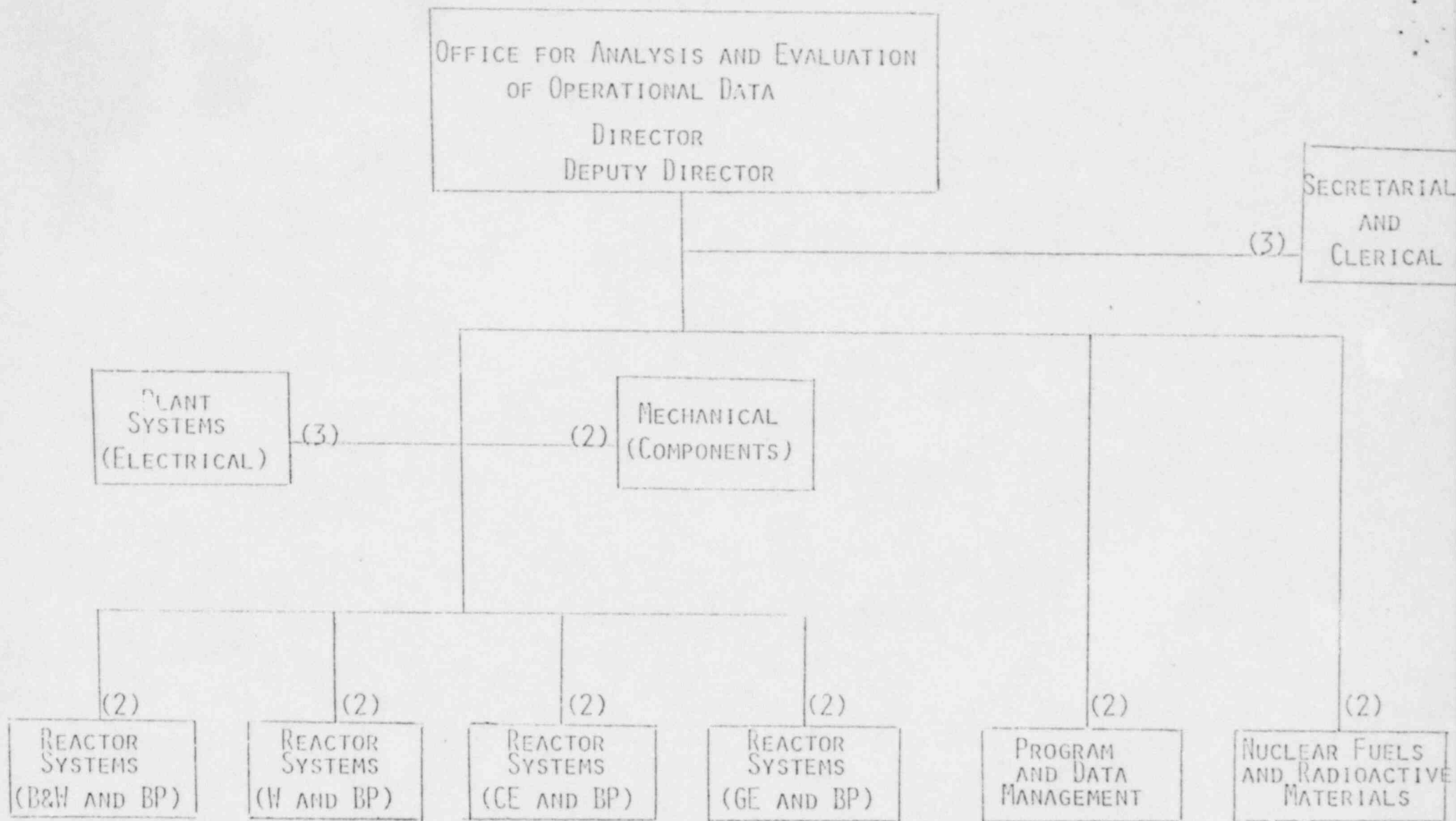
The current authorized level of AEOD is 22. A commitment was given to the Commission that the personnel resources would be studied in light of the anticipated work load and an assessment made by July 15 (in conjunction with the FY-82 budget review). It is anticipated that additional resources will be required in order to: account for the increasing number of operating reactors; expand the quantity and depth of studies of reactor operational data; account for the anticipated increased workload associated with the review of operational data from NWS-licensed activities;

and achieve effective management control and information systems. Small increases in staff will also be required in order to have at least a limited capability to monitor, coordinate, and perform work in the fields of human factors, risk assessment, and radwaste systems. This limited capability is needed without regard to the final resolution of the organizational items noted previously.

Program support resources are currently estimated at \$110K in the FY-80 supplemental and \$500K in the FY-81 budget request. In addition, RES-PAS has allocated \$500K as part of the FY-80 supplemental and \$1,000K as part of the FY-81 budget request for work in direct support of AEOD identified concerns. These program support resources, if available, are believed to be sufficient in light of currently identified needs. These needs include: (a) support of work to properly sort, abstract, codify, and place foreign operational data and information in a computerized data bank; and (b) reclassification of available operational data to achieve consistency in equipment identifications and to identify cause - effects of events for analysis purposes.

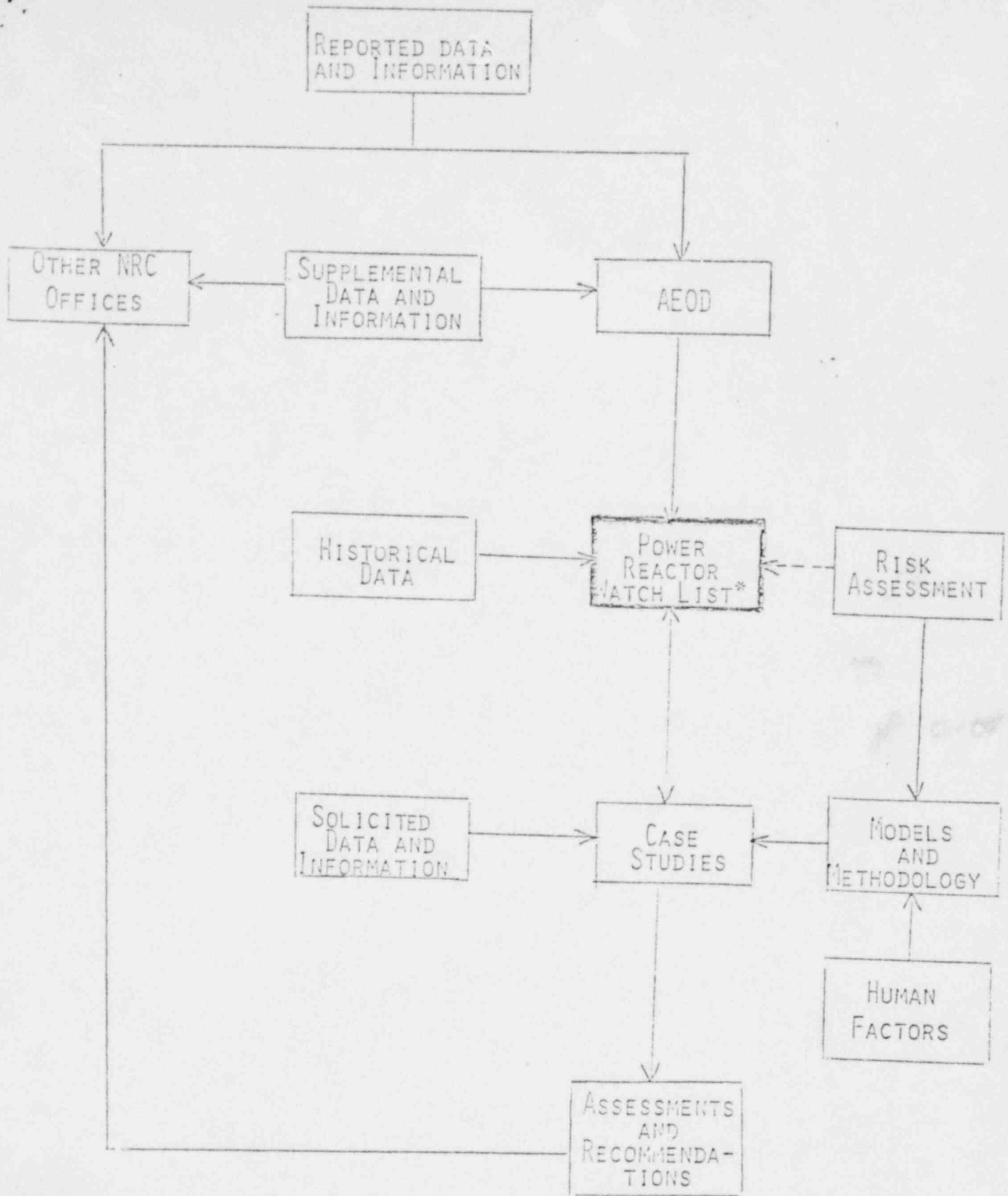
FINAL PROGRAM PLAN

This interim program plan will be replaced with a final office plan by January 1981. The final plan will reflect any changes in major objectives, office organization, program activities, and required resources as determined during the next few months to meet the needs of the office or to properly implement EDO and Commission decisions.



AEOD INTERIM ORGANIZATION

Figure 1



*DEVELOPED AND GUIDED BY POWER REACTOR REVIEW PANEL

AEOD POWER REACTOR WATCH LIST PROGRAM

Figure 2