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AUTH.NAME AUTHOR AFFILIATION
GIESLER,C.W. Wisconsin Public Service Corp.
RECIP.NAME RECIPIENT AFFILIATION
EISENHUT,D.G. Division of Licensing

SUBJECT: Forwards revised response to Suppl 1 to NUREG-0737 (Generic Ltr 82-33), "Requirements for Emergency Response Capability," & revised program plan rept, ("Detailed Control Room Design Review.") "See Rept." 1

DISTRIBUTION CODE: A003S COPIES RECEIVED:LTR 1 ENCL 24 SIZE: 2+200
TITLE: OR/Licensing Submittal: Suppl 1 to NUREG-0737(Generic Ltr 82-33)

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NRC-83-87

WISCONSIN PUBLIC SERVICE CORPORATION

P.O. Box 1200, Green Bay, Wisconsin 54305

April 21, 1983

Director, Office of Nuclear Reactor Regulation
Attention: Mr. D. G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Eisenhut:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Additional Copies of Supplement 1 to NUREG-0737 response

Reference: 1) Letter from C W Giesler to D G Eisenhut dated April 15, 1983

In reference 1 we commited to supplying twenty-four additional copies of our response to Supplement 1 to NUREG 0737. A closer review of the Kewaunee Detailed Control Room Design Review plan has identified some minor typographical errors. Twenty-four copies of our response and the revised plan are enclosed along with an errata sheet indicating the changes made to the plan since our April 15 submittal.

Very truly yours,

C R Lee for

C W Giesler
Vice President Nuclear Power

ms

encl

cc - Mr. Robert Nelson, US NRC
Mr. S A Varga, US NRC w/o enc.
Mr. Jesse Paliaro, US NRC "
Mr. C F Riederer, PSCW "

A003
1/24
Add: W. Paulson

ERRATA SHEET
FOR
KEWAUNEE DETAILED CONTROL ROOM DESIGN REVIEW PLAN
SUBMITTED ON APRIL 15, 1983

Page	Line	
vi	12	"System Function Review" was changed to read "System Review"
1-3	15	Line moved 1 space to the right
2-5	16	Corrected spelling of "preferred"
4-19	19	"Function review" was changed to read "System review"
4-23	14	"Function review" was changed to read "System review"
4-25	22	The word "function" was deleted
4-30	16	The word "function" was deleted
4-47	2	The spelling of "judgment" was changed for consistency
5-4	18	The spelling of "judgment" was changed for consistency
5-9	4	The word "function" was deleted
5-10	14	The spelling of "judgment" was changed for consistency

Changes made for the following reasons:

- Consistency of spelling within the report
- Consistency of terminology with the WOG generic documentation

NRC-83-85

WISCONSIN PUBLIC SERVICE CORPORATION

P.O. Box 1200, Green Bay, Wisconsin 54305

April 15, 1983

Director, Office of Nuclear Reactor Regulation
Attention: Mr. D. G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Implementation of Integrated Emergency Response Capability Plan

Reference: 1) Generic Letter 82-33, Supplement 1 to NUREG-0737

Pursuant to your request in reference 1 the attachment to this letter provides a status report on the referenced NUREG-0737 items and a proposed schedule for completing each of the basic requirements. One copy of the attachment is submitted at this time. Per our agreement with our Project Manager, twenty-four additional copies will be submitted by April 22, 1983.

We will work closely with our NRC Project Manager so that an agreement on the final schedule can be reached as quickly as possible.

Very truly yours,

C W Giesler
Vice President - Nuclear Power

ms
cc - Mr. Robert Nelson, US NRC
Mr. S A Varga, US NRC

Subscribed and Sworn to
Before Me This 15th Day
of April 1983

Notary Public, State of Wisconsin

My Commission Expires:
March 24, 1985

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8304190362

Attachment to Letter

From C. W. Giesler to D. G. Eisenhut

Dated April 15, 1983

On October 30, 1980, the NRC staff issued NUREG-0737 which incorporated into one document all TMI-related items approved for implementation by the commission at that time. NUREG-0737 provided generic implementation deadlines which did not consider the integration of related items.

On December 30, 1982, Wisconsin Public Service Corporation (WPSC) received NRC Generic Letter 82-33 Supplement 1 to NUREG-0737 entitled "Requirements for Emergency Response Capability." Supplement 1 was developed to provide licensees with additional clarification regarding Safety Parameter Display Systems, Detailed Control Room Design Reviews, Regulatory Guide 1.97 (Revision 2) - Application to Emergency Response Facilities, Upgrade of Emergency Operating Procedures, Emergency Response Facilities and Meteorological Data. The clarification requires WPSC to develop and submit an implementation schedule for the referenced items, which will be reviewed by our NRC Project Manager. The NRC Project Manager and WPS will reach an agreement on the final schedule.

Implementation Plan

Prior to the issuance of Generic Letter 82-33, WPSC carefully reviewed numerous NRC and industry guidance documents and proceeded, in a good faith effort, to implement many of the items referenced in NUREG 0737. This submittal describes our methods to coordinate these projects into an integrated program. Many projects are well underway or have been completed based on previous NRC guidance documents; therefore, we will rely on the NRC commitment to "make allowances for work already done by licensees in a good-faith effort to meet requirements as they understand them."

This submittal is intended to provide the current status on each item, projected completion dates, and an integrated implementation plan for the work that is remaining. The integration of these emergency response activities will result in a better overall emergency response program.

Committees have been formed for the Control Room Design Review (CRDR), Safety Parameter Display System (SPDS), and Emergency Operating Procedures (EOP) These committees consist of personnel from various disciplines with some personnel participating on more than one committee. This organization will provide a wide range of expertise and will prevent duplication of effort. Since a major deficiency identified by one committee might be easily corrected by a simple change in another activity (i.e. a well designed SPDS could obviate the need for extensive modifications to the control room), it is important that the committees interface with one another. The method of interface will be through the identification of Human Engineering Observations (HEO's). The EOP, SPDS and CRDR committees will each have a method of identifying differences from an applicable standard which the CRDR will consider as HEO's. The CRDR team will assess the significance of the HEO's individually and collectively and will develop a set of recommended methods for correction. The recommendations will consider the integrated effects of the change on each of the activities. A detailed description of the individual activities is described below.

Detailed Control Room Design Review (DCRDR)

In accordance with Supplement 1, WPS has developed a Control Room Design Review Plan which is intended to "improve the ability of nuclear power plant control room operators to prevent accidents or cope with accidents if they occur by improving the information provided to them."

The CRDR plan, which is enclosed as Enclosure 1, was developed using the guidance provided in NUREG-0700, Guidelines for Control Room Design Reviews, and draft NUREG-0801 (Oct., 1981) Evaluation Criteria for Detailed Control Room Design Review. The plan will evaluate the effectiveness of the control room during emergency operations.

The three main objectives of the CRDR Plan are to identify Human Engineering Observations (HEO's), to evaluate and categorize those which are Human Engineering Discrepancies (HED's), and establish an implementation plan for corrective actions.

A team of multidisciplinary personnel, including those with expertise in human engineering and plant operations, will implement the review plan. The qualifications of the CRDR team are identified in the plan. It is our intent to have personnel participate in more than one activity (i.e. CRDR & EOP) if possible, thereby providing continuity in all the activities of the integrated program.

The methods for identifying Human Engineering Observations (HEO's) include, but are not limited to, an operating experience review, operator surveys, control room surveys, task analysis of emergency procedures, and a validation of plant specific emergency operating procedures. Inputs from the Emergency

Operating Procedures Committee and Safety Parameter Display Committee will identify differences in their plant specific product from the generic product. The differences will be considered HEO's and will be evaluated by the CRDR team. Those determined to be HED's will be categorized by the CRDR team and recommended correction methods will be forwarded to management for final disposition.

The correction methods available to the review team include enhancements, design changes and procedure changes. The process for determining the most appropriate correction method is described in the plan.

According to Generic Letter 82-33, WPS is required to submit a CRDR program plan at least two months prior to the start of the control room review. Our plan is hereby submitted as Enclosure 1. If no NRC concerns are expressed, approval is assumed, and we intend to start implementing our Control Room Review about July 1, 1983 and expect to submit a summary report outlining proposed control room changes approximately in November, 1984.

Emergency Operating Procedures

The Westinghouse Owners Group has developed generic Emergency Response Guidelines (ERG's) for use in preparing plant specific Emergency Operating Procedures (EOP's). These generic guidelines have been submitted to the NRC for review. WPS has formed an EOP committee to utilize the generic guidelines and develop a set of plant specific EOP's. The committee consists of personnel from a variety of departments within WPS including operations, technical support, licensing and training, thereby providing various disciplines and expertise.

WPS has utilized INPO guidance documents to prepare a Writer's Manual and a Technical guide which committee members will use in preparing, reviewing, and revising integrated plant EOP's.

The plant specific EOP's will conform to the generic ERG's wherever possible with the inclusion of the necessary plant specific information. An EOP Step Documentation Form will be completed for each EOP step that differs significantly from the corresponding ERG step. These forms will also be reviewed by the CRDR team and handled as HEO's. If the difference is necessitated by a lack of instrumentation to adequately perform the generic task, the CRDR team will evaluate other related HEO's and recommend a resolution.

The validation phase of the procedures activity will require development of scenarios and operator participation in implementing the procedures on the Kewaunee Simulator. This activity will be performed under the direction of both the EOP and CRDR committees. Any deficiencies identified during this phase will be identified as HEO's and assessed. The recommended method of correction may necessitate changes to the procedures, control room or training.

Following the validation, training will be initiated to familiarize the SRO's, RO's and STA's with the upgraded procedures. The training will be conducted concurrent with the operator requalification program, thereby assuring that licensed operators and STA's are trained in the new procedures prior to implementation.

WPS will submit a procedures generation package by January 1, 1984. The package will include:

- A description of the method for developing plant specific EOP's from the generic guidelines, including plant specific information,
- A Writer's Manual that details the specific methods used in preparing EOP's based on the technical guidelines.
- A description of the program for validation of EOP's.

The EOP's will be implemented following classroom and simulator training in accordance with the operator training and requalification program. We expect to complete training and implement the upgraded EOP's by the end of the 1985 refueling outage.

Safety Parameter Display System

WPS was one of the original sponsoring utilities in the Safety Assessment System (SAS) project which was ultimately supported by ten domestic and two foreign utilities. This project started as the Westinghouse Owners Group (WOG) Subcommittee on Control Room Instrumentation in response to requirements identified in NUREG 0578 shortly after the TMI incident. As the work scope authorized by the WOG was completed, several of the participating utilities continued in a cooperative effort to design a control room information system which satisfied the guidelines for a Safety Parameter Display System (SPDS) as outlined by NUREG 0696.

In the course of project development, several informational meetings were held with NRC staff members: specifically on April 2, 1980 with the WOG Subcommittee on Control Room Instrumentation, and on May 14, 1981 and November 19, 1981 with the SAS Interface Committee (all meetings were held in

Bethesda). These meetings consisted of technical updates as well as display presentations (from 35mm slides). The color reproductions of the generic displays were submitted to Leo Beltracchi (NRC) from Ward Wogsland, SAS Chairman, on May 19, 1981 as a proprietary submittal.

Several members of the NRC staff and the ACRS staff participated in a SAS presentation made during a late stage of project validation at the Indian Point simulator. This presentation, April 14, 1982, allowed observation of the generic SAS in a dynamic environment.

WPS, as an active member of the SAS project, has demonstrated a responsive action plan for supplying an SPDS which will provide a useful operator tool. The SAS project was completed on May 20, 1982. The final Functional Design Specification, the end result of the SAS project, has been supplied to our computer supplier who is presently in the process of implementing a Kewaunee specific SAS.

The generic SAS project established, with the supplier, a Verification and Validation (V&V) program which was implemented during that project. Since the conclusion of the project, additional NRC guidance has been provided which could be used to establish a new V&V program; however, to rewrite the V&V program for the completed project would be counterproductive. The operator testing program at Indian Point essentially validated the concepts of SAS and confirmed that SAS does meet the intent of the SPDS. Parameter selection, human factors review, and operational considerations were all part of the generic development and documented in project files.

The Safety Assessment System should be considered as enhanced operational display, providing the following functions:

Safety Parameter Display System (SPDS)

Safety System Ready Monitor (SSRM)

Safety System Performance Monitor (SSPM)

Accident Identification Display System (AIDS)

Channel Malfunction Monitor (CMM)

Critical Safety Function Monitor (CSFM)

It should be noted that the SPDS function does not require the full implementation of the SAS, and that total implementation of the SAS may be phased to address the more critical functions of SPDS and CSFM.

At the present time, WPS is working closely with our computer vendor to supply the Kewaunee specific design. This process is mainly that of correlating the generic inputs (Indian Point simulator--four loop PWR) to the Kewaunee plant, and evaluating constraints imposed by the selected hardware. Examples of design review are:

1) Constraints due to limited computer data base
2) Constraints due to computer data fidelity
3) Variations in plant design (2 vs. 4 loop)
4) Constraints due to computer hardware limitations

Following the completion of the Kewaunee specific design, a safety analysis report (SAR) will be prepared evaluating departures from the generic design. This report is scheduled to be submitted by August 1, 1983.

To support the preparation of the SAR, and to extend the V&V program to the Kewaunee specific design, an internal (WPS) V&V program will be established. A key element to this program is the identification of implementation discre-

pancies. During the specific design phase, discrepancies will be documented by the designer; however, independent internal WPS reviews will also be performed to establish that the V&V program is conducted by personnel not directly responsible for the design. A formal review of these discrepancies, through the design phase, will support the SAR.

In addition to supporting the SAR, the discrepancies will be submitted to the Control Room Design Review (CRDR) project for evaluation. Where the SAS deviations are considered significant by the CRDR, changes will be recommended and system changes evaluated. If the CRDR considers a deviation minor, or that some other means of resolving the discrepancy exists, it may be concluded that no further action is required.

The generic SAS project generated training material for the generic system. The material is useful and consists of a self study booklet and video tape. This material has not been integrated into the training program at this time because of the relatively long time period before the personnel would utilize the specific equipment. The SAS will be integrated into the Kewaunee plant simulator and will be incorporated into simulator training programs. The generic training material will be available for the training program until a specific package can be assembled following the complete implementation.

The AIDS portion of the SAS is an advanced concept which has not been validated on either a two loop generic plant or the Kewaunee plant. As SAS is implemented at Kewaunee, the AIDS calculations will be performed, however control room display of the AIDS calculation will be inhibited. The calculated output of the AIDS algorithm will be archived and subject to design review following any plant transients. After a valid SAS simulation is imple-

mented in the Kewaunee specific simulator, the AIDS will be "fine tuned" for Kewaunee, validated for use with procedures, and enabled in the plant.

This implementation is not considered an extension to our SPDS implementation; this AIDS implementation information is provided to you at this time because, as discussed earlier, members of your staff are familiar with the AIDS, and the phased implementation of SAS is considered prudent by our staff.

As you are aware, software schedules are very volatile. WPS has, as a cost control measure, attempted to maintain schedular pressure on our supplier. At the present time, a system demonstration at the vendor's facility is scheduled for October 1, 1983; we anticipate the Kewaunee SPDS to be fully operational by the completion of the spring 1984 refueling outage.

Upgraded Emergency Response Facilities

The Emergency Response Facilities (ERF) including the Technical Support Center (TSC), Operational Support Facility (OSF) and the Emergency Operations Facility are complete and operational. Descriptions of these facilities are documented in Reference 1 and the Kewaunee Nuclear Power Plant Emergency Plan (Rev. 1) submitted April 14, 1983. Section 7 of the Emergency Plan describes the equipment, instrumentation, workspace and communications available in each facility. The plan also details the locations and expected function of each facility.

The TSC and EOF are equipped for acquisition, collection, evaluation and display of information necessary to determine protective measures. The TSC and EOF have access to the plant computer and also have dedicated communication links to the control room. The information available via the control room data links is more than adequate for the EOF and TSC to perform their intended functions. Each

facility is provided with sufficient documents and communications required for its function. The floor plans for the TSC and EOF, included as Figures 1 & 2 respectively, provide adequate workspace for WPS, federal, state and local officials. The EOF will be provided with security personnel when it is activated to exclude unauthorized personnel and will be locked when it is idle to maintain its readiness.

A successful emergency exercise was completed on February 23, 1982 and documented in NRC Inspection Report 82-06. The report identified that the onsite "EOF must be relocated to a more suitable location to minimize potential exposure to occupants and have adequate space for the number of personnel required to perform EOF functions." To alleviate this concern, WPS relocated the EOF to a location approximately 17 road miles south of the plant. The new EOF occupies a portion of the WPSC Lakeshore Division Office in Two Rivers, Wisconsin and provides adequate space and communications for personnel to perform EOF functions. WPSC has held training sessions to familiarize personnel with the new EOF and is scheduled to perform a full scale exercise on November 1, 1983.

Following the completion of the Control Room Design Review, a small scale review of the ERF's will be performed to verify that they are appropriately designed from a human engineering perspective.

Accident Monitoring Instrumentation

The development of the Westinghouse Owners Group ERG's required extensive evaluation and analysis of accidents including multiple failures. The procedures were verified and validated to provide assurance that they were adequate to monitor and mitigate a wide range of accidents. The Generic System Review and

Task Analysis performed on the ERG's listed the instrumentation necessary to adequately assess plant conditions and implement the ERG's.

The plant specific adaptation of the WOG System Review and Task Analysis, based on the KNPP EOP's, will identify the instrumentation necessary to implement the plant specific procedures, and the EOP Step Documentation Form will provide justification for use of instruments other than that identified in the ERG Task Analysis. The availability of the instruments identified in the EOP Task Analysis will be documented by the CRDR team, and any deviations from the ERG instrument list will be evaluated and justified or provided in the control room, if necessary. This process will ensure that the instrumentation necessary and sufficient to assess plant conditions during and following an accident is available in the control room.

Meteorological Data

In Reference 2 we provided a system description of our upgraded meteorological system. Indication of wind speed, wind direction, differential temperature, Sigma Theta, ambient temperature, aspirator status, and dew point is available on instrument racks located in the Technical Support Center. The analog racks in the TSC will also provide signals to the new plant process computer (upon installation). Meteorological data will be available, via computer terminals, in the Control Room, the EOF, and the TSC. The system has undergone preoperational testing and a spare parts list has been developed. We are currently awaiting receipt of the spare parts inventory. Continued operability of the system cannot be assured without the immediate accessibility to the necessary spare parts; therefore, the new system has not yet been declared operational.

Upon receipt of the spare parts inventory, updated Emergency Plan Implementation Procedures (EPIP's) will be issued and the new system will be declared operational.

The meteorological system currently in operation provides indication of wind speed, wind direction and differential temperature (atmospheric stability) on an instrument rack located in the Control Room. Until such time that the spare parts arrive, the current system will be utilized.

Staffing for Emergencies

In Reference 3 we committed to meet the minimum staffing requirements of Table B-1 in NUREG-0654 subject to some interpretations and exceptions to the implementation dates. At the time, heavy emphasis was being placed on the immediate upgrading of emergency response capabilities, and the NRC staff was enforcing Table B-1 as though it were law.

The commitments made in Reference 3 were made prior to the clarification that the staffing levels in Table B-1 were only guidance and under considerable pressure from the NRC. Supplement 1 to NUREG-0737 clarified for NRC staff and the industry that Table B-1 was guidance and should be treated as such.

The commitments to meet Table B-1 were made prior to any clear definition of need. Now that our Emergency Plan has been upgraded and implemented, staffing levels for emergencies are better clarified and, consequently, our commitment made in Reference 3 regarding a Chemistry Technologist on shift was revised in Reference 4.

On January 2, 1983, a Communicator was designated on each shift in addition to the normal operating staff. The Communicator is an extra person on shift who is dedicated to notifications and communications.

The remaining outstanding commitment is to provide an additional SRO on shift by January 2, 1984. (It should be noted that this is an optimistic schedule which depends heavily on a favorable pass/fail rate of SRO applicants and timely examinations from NRC. As indicated in reference 5 we are proceeding as expeditiously as possible. We will keep you apprised of progress.) The additional SRO will be available to assist the Shift Supervisor in performing his administrative and operational duties. Therefore, on January 2, 1984, the dedicated Communicator position will be eliminated, and one of the shift members will assume the initial notification and communication responsibilities. We feel this organization will provide sufficient on-shift staffing to implement the emergency operating procedures and mitigate any plant transients. The Control Room Design Review will ultimately identify appropriate staffing levels to adequately handle emergency situations.

References

1) Letter from C W Giesler to D G Eisenhut dated June 1, 1981

2) Letter from C W Giesler to J G Keppler dated March 15, 1983

3) Letter from E R Mathews to D G Eisenhut dated September 10, 1981

4) Letter from C W Giesler to D G Eisenhut dated December 8, 1982

5) Letter from C W Giesler to S A Varga dated February 25, 1983

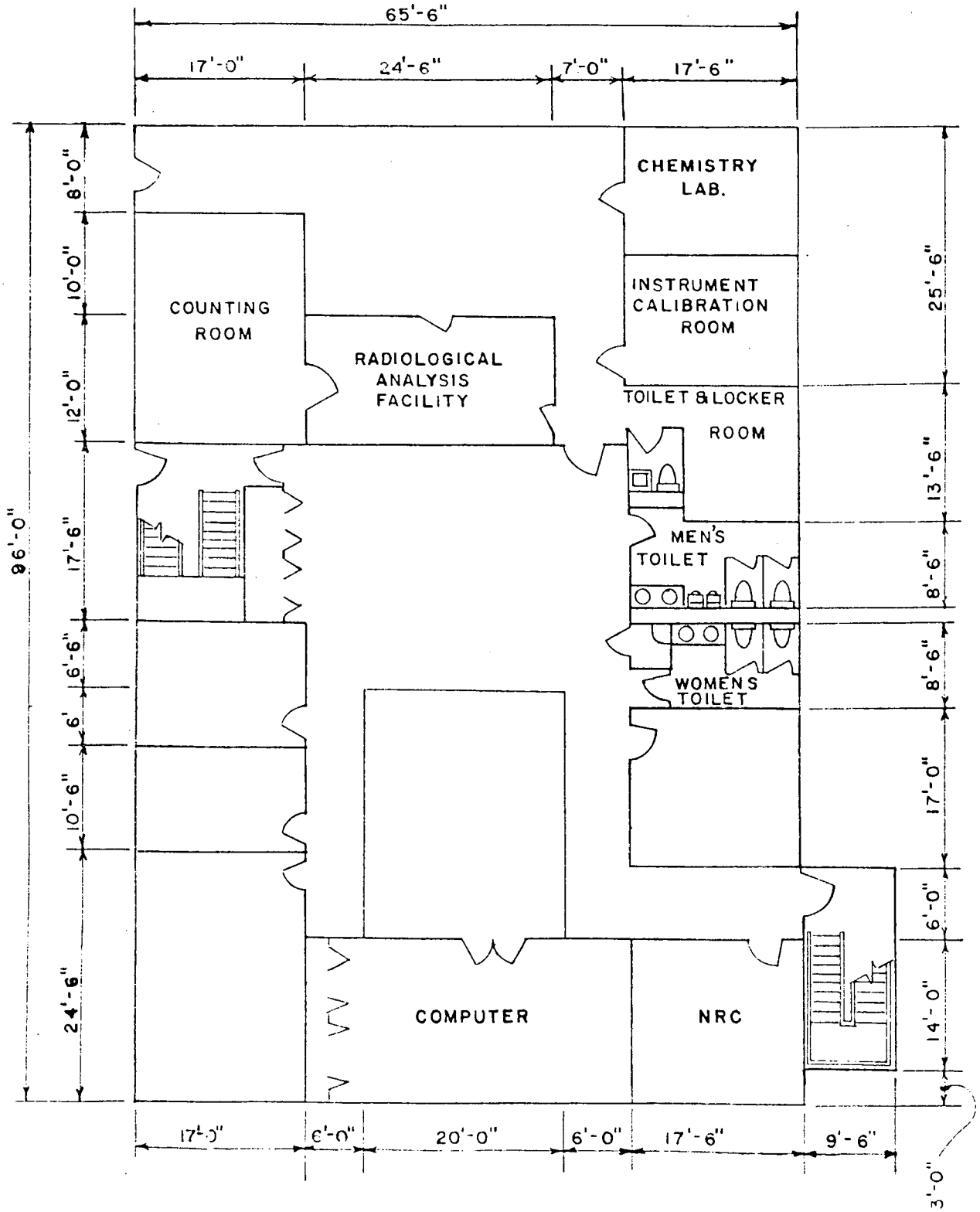

Figure 1
Technical Support Center

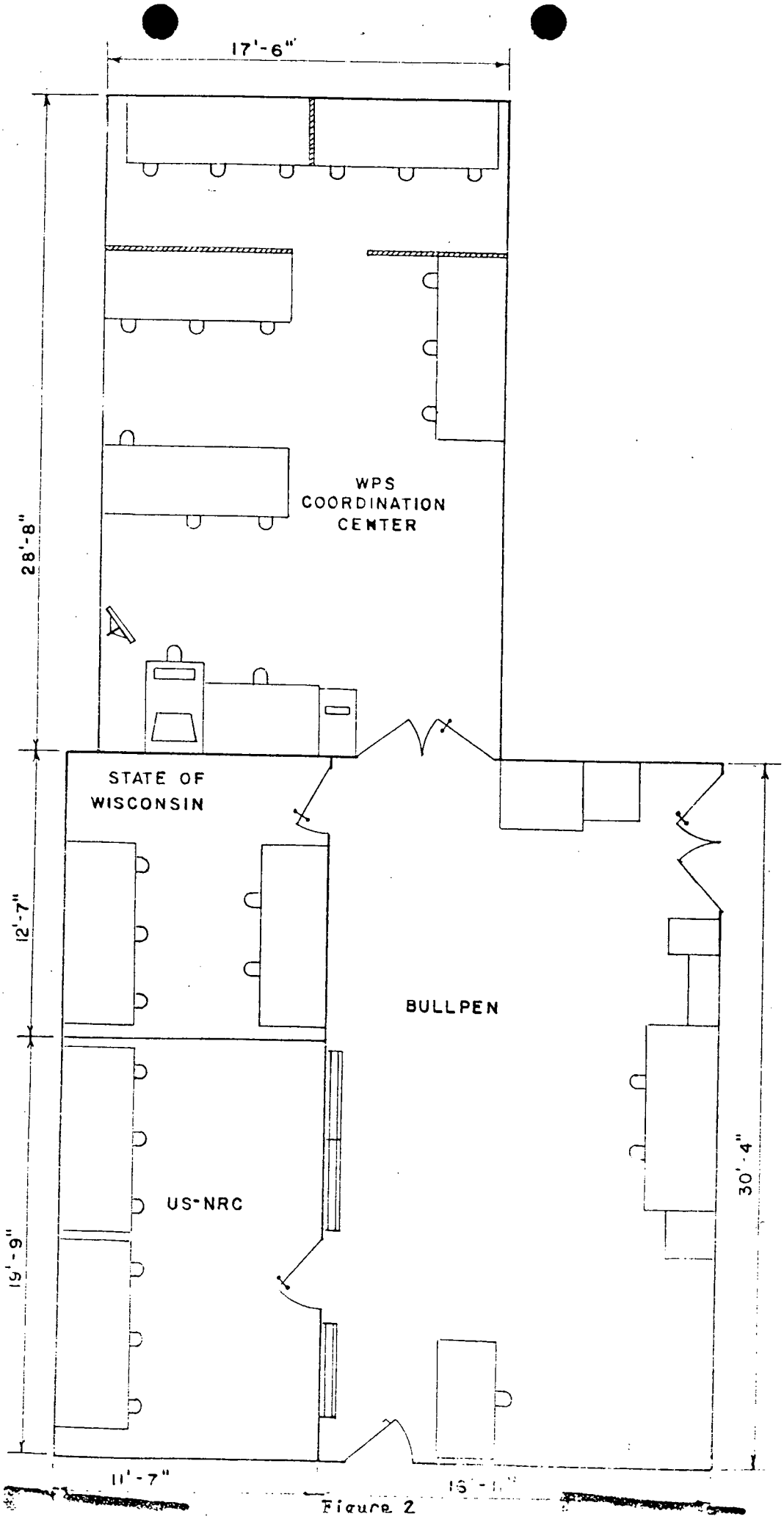
17'-6"
28'-8"
WPS
COORDINATION
CENTER
STATE OF
WISCONSIN
12'-7"
BULLPEN
US-NRC
19'-9"
30'-4"
11'-7"

Figure 2