

BYRON STATION EMERGENCY OPERATING PROCEDURES
VALIDATION AND VERIFICATION GUIDE
(HP, BASIC, REV. 0)

1.0 PURPOSE:

To establish the accuracy of information and/or instructions, to determine that the emergency operating procedures can be accurately and efficiently carried out, and to demonstrate that the procedures are adequate to mitigate transients and accidents.

2.0 APPLICABILITY:

The validation and verification process applies to the following sets of emergency operating procedures, generated from the Basic HP WOG Technical Guidelines.

1. BEP - Byron Emergency Procedures
2. BEP ES-Byron Emergency Procedure Event Specifics
3. BCA - Byron Contingency Actions
4. BST - Byron Status Trees
5. BFR - Byron Functional Restorations

3.0 OBJECTIVES:

- a. Verify that the emergency operating procedures are technically correct, i.e., they accurately reflect the technical guidelines.
- b. Verify that the emergency operating procedures are written correctly, i.e., they accurately reflect the plant-specific writer's guide.
- c. Validate that the emergency operating procedures are usable, i.e., they can be understood and followed without confusion, delays, errors, etc.
- d. Validate/Verify that there is a correspondence between the emergency operating procedures and the control room/plant hardware, i.e., control/equipment/indications that are referenced, are available (inside and outside of the control room), use the same designation, use the same units of measurement, and operate, as specified in the procedures.

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- e. Validate that the language and level of information presented in the emergency operating procedures are compatible with the minimum number, qualifications, training and experience of the operating staff.
- f. Validate that there is a high level of assurance that the emergency operating procedures will work, i.e., the procedures guide the operator in mitigating transients and accidents.

4.0 METHODS:

The verification and validation process will be implemented utilizing the following methods:

- a. Desk top review boards.
- b. Control room walkthroughs.
- c. Exercising the emergency procedures on a plant specific simulator.
- d. Seminars and computers analysis provided by the Westinghouse Owners Group.

5.0 PROCESS

The current Byron emergency procedures were generated using the WOG HP basic version technical guidelines. A four man team wrote the plant specific emergency procedures. This team consisted of a mechanical engineer, electrical engineer, a previous NRC RO license holder with large four loop PWR experience, and a Shift Foreman with substantial in-plant experience. All members of this team were SRO certified. After drafting the procedures, the writer team reviewed each procedure as a group. Each procedure was then subsequently reviewed and approved by the Byron On-Site Review Board. This board consisted of members with the following ANSI recognized disciplines; nuclear power plant technology, reactor operations, reactor engineering and mechanical and electrical systems. In addition, the emergency procedure set was sent for review and comment to the Westinghouse NTD group at their Pittsburgh office.

Presently, the procedures are being revised to include calculated setpoints and numbers provided by Westinghouse, to reflect recent design changes made to plant systems, and to incorporate in-house generated comments. These revisions are being incorporated on-site by Westinghouse writers. Both of these Westinghouse writer's hold current SRO certifications, and are under the direction of a Byron SRO licensee.

When these revisions are incorporated, the procedures will be reviewed by on-site review. It should be noted that these changes are not major in nature, but rather are the result of a "fine-tuning" effort.

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- a. The verification process with respect to objective "a", of verifying that the procedures accurately reflect the technical guidelines was accomplished by table-top review. This consisted of a writer's group review after the procedure was drafted, and review and approval by the On-site review board. In addition, any changes made to the WOG technical guidelines, that were necessary due to plant specific characteristics, were documented by the writer team, and utilized by On-site review during their approval process. The Westinghouse review will also verify that the procedures reflect the technical guidelines.
- b. The verification process with respect to objective "b" of verifying that the procedures adequately reflect the Writer's Guide was accomplished by table top review. This review process was independently performed by writer team review, and on-site review.
- c. The validation process in objective "c" of verifying that the procedures are "useable" will be accomplished by the following methods.

The emergency procedure set has been in use at the plant specific simulator since early May of 1983, and have seen extensive use. The station administrative procedure governing procedure use, (BAP 300-11), requires that if a user finds any errors or problems with emergency procedures during study, simulator exercise, or use, that such problems will be noted and relayed to a Shift Engineer or Operating Engineer for review and resolution.

Several comments and problems have been noted by users both during simulator exercise and self study for license exam. These concerns are being reviewed and will be incorporated in the current revision by Westinghouse.

In addition, each procedure will be validated on the plant specific simulator or during walkthrus on the stations main control boards as addressed in item f, and checked for usage problems.

- d. The verification and validation process with respect to item 'd' regarding correspondence between procedures and hardware was accomplished in the following manner. During the writing process the procedures were "walked through" on the main control board to verify correspondence between procedures and controls. In addition, during the simulator validation process the procedures will be checked for correspondence problems.

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- e. The validation process with respect to objective "e" of validating that emergency procedures language and level of detail is compatible with the qualifications, training, and minimum number of the operating crews, will be accomplished in the following manner. Comments were generated on level of detail and language during simulator use, self-study, and during the Westinghouse review. The simulator validation will determine that operator crew size is sufficient, and will check again that language and detail is acceptable.
- f. The validation process with respect to objective "f" of validating that emergency procedures will mitigate transients will be resolved in the following manner. In order to validate the generic technical guidelines the station references the Owner's Group validation, "Summary Report - Emergency Response Guidelines Validation Program, WCAP 10204, September 1982", NRC SER Generic letter 83-22, and the WOG HP BASIC background, (basis), documents. In addition, each procedure will be run on the simulator to verify that plant specific changes will not impede the mitigating of the accidents, and that acceptable results occur.

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