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QUARTERLY REPORT

Nuclear Power Plant Design Concepts

for

Sabotage Protection

Tenth

Quarterly Progress Report

July-September 1980

A. Phase I Report: Volume I of the report (main body) has been revised and edited based upon inputs received from the NRC staff, the ACRS Subcommittee on Safeguards, the Design Study Technical Support Group and other reviewers. The revised text has been submitted for final approval and publication. Volume II of the report (supporting data and analyses) has also been submitted for approval and publication. Both of these volumes should be distributed in the next quarter. Volume III (classified fault trees and analyses) is being reworked and should be submitted for editing and typing during the next quarter. Volume III will have limited distribution.

Presentations on this material were prepared for the 21st Annual Meeting of the Institute for Nuclear Materials Management (June 30-July 2, 1980) and the ANS Workshop on Power Plant Security (October 5-8, 1980).

B. Phase II Study: A revised Phase II program was defined and submitted to NRC for approval on August 5, 1980. As of the end of the quarter, approval to proceed had not been received; therefore, there has been no activity under Phase II. The revised program contains four tasks:

1. Design Changes for BWR Plants. The task will characterize a typical current generation BWR plant, define and prepare conceptual layouts for alternatives (similar to what was done for PWR) and evaluate the baseline BWR and alternatives using the techniques employed in Phase I. This will verify whether or not the conclusions reached for PWRs are valid for BWRs.

2. Damage Control for Sabotage Mitigation. This task will revise and extend the matrix of damage control concepts defined in Phase I. Particular attention will be paid any revisions or amendments of current licensing practice that may be required.

3. Insider Protection. This task will provide a preliminary, but integrated, evaluation of possible solutions to the insider threat. Critical systems will be rank ordered and earlier suggestions for insider control reviewed for applicability. Also, the potential of design changes for specific insider control will be explored. A preliminary estimate of the impact of any insider controls will be generated. Finally, this

task will examine the interaction between, and interactior of, operations and security staff response to unauthorized acts by insiders.

4. Retrofittable Design Changes to Enhance Protection Against Sabotage. This task will identify and rank equipment and locations of concern, identify potential sabotage acts, propose design changes or fixes and evaluate the effects of the changes where possible.