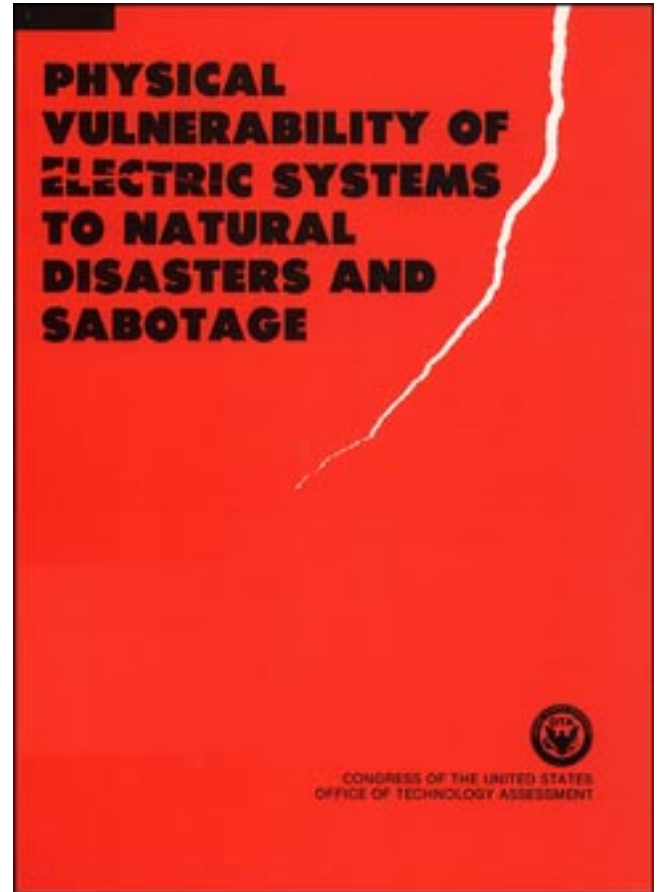


*Physical Vulnerability of Electric Systems to
Natural Disasters and Sabotage*

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Foreword

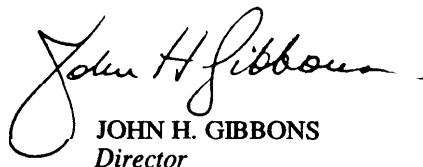
This assessment responds to requests by the Senate Committee on Governmental Affairs and the House Committee on Energy and Commerce to evaluate the potential for long-term electric power outages following natural disasters and deliberate sabotage. This report complements earlier OTA reports: *Electric Power Wheeling and Dealing-Technological Considerations for Increasing Competition*; and *New Electric Power Technologies—Problems and Prospects for the 1990s*.

This country has enjoyed remarkably reliable electric service for the most part. Very few blackouts have affected many people for more than a few hours. Nevertheless, much worse blackouts are possible which could cause enormous disruption and expense for society. It is the intent of this report to analyze how such disasters could happen and how the risk could be reduced.

OTA examined the effects on an electric power system when various components are damaged and how the system can be restored. Present efforts and potential options to reduce vulnerability are described. Also, specific policy measures are analyzed and grouped according to whether they are likely to be implemented and their costs.

This report contains no information not readily available from other public sources that would assist saboteurs in destroying electric power facilities and causing widespread blackouts. An analysis of the vulnerability of specific equipment is included in a separate appendix that is under classification review **by** the Department of Energy. This appendix will be made available only under appropriate safeguards by the Department of Energy.

OTA appreciates the generous assistance provided by our workshop participants as well as other individuals who contributed to this report by providing information, advice, and substantive reviews of draft materials. To all of the above goes the gratitude of OTA and the personal thanks of the project staff.



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