

TESTIMONY  
BEFORE THE  
PRESIDENT'S COMMISSION  
ON THE ACCIDENT AT THREE MILE ISLAND

BY  
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## INTRODUCTION

Chairman Kemeny, members of the President's Commission on the Accident at Three Mile Island, my name is Herman Dieckamp. I am president, chief operating officer and a director of General Public Utilities. I am also a director of Metropolitan Edison and the other GPU subsidiaries.

We are pleased to have the opportunity to appear before you today and we pledge our full and open support to the very important task that you have undertaken.

My objective today is to provide some management overview to the various subjects on today's agenda. We are hopeful that the panels of management and operating personnel will be helpful in allowing us to respond effectively to the full range of your questions.

In addition to my participation in today's proceedings, I have submitted the company testimony given before the Hart subcommittee on Nuclear Regulation of the Senate Environment and Public Works Committee. It is my hope that that testimony can also provide an overview of the accident from the company's point of view.

I would urge that your Commission adopt a broad point of view with respect to the accident at Three Mile Island and that you look beyond the specifics of equipment and human performance into the underlying bases for nuclear plant design, operation, operator training, and regulation. While the accident was a traumatic experience to the local populace and continues to have an impact

on the GPU companies and their customers, we must now turn our attention to a full understanding of the accident and ensure that we derive the maximum learning from this experience.

I would like now to introduce my fellow participants on this morning's panel and to proceed with a brief description of the GPU organization and its involvement in nuclear power and the TMI-2 plant. Mr. Creitz, president of Metropolitan Edison, and Mr. Herbein, v.p. of generation for Met-Ed, will expand on the organizational structure with emphasis on its relationship to TMI plant operations and safety. Mr. L. Tsaggaris, engineering supervisor, Met-Ed, will describe the emergency plan in place at the time of the TMI accident.

#### GPU ORGANIZATION

General Public Utilities Corporation is an electric utility holding company that provides electricity to some 4 million people living in about half the land area of New Jersey and Pennsylvania. It serves over 1.5 million customers. With a generating capacity of 8281 Mw, more than 31 billion kilowatt-hours of electricity were distributed in 1978.

The GPU System includes three operating companies: Jersey Central Power & Light Company, Metropolitan Edison Company, and Pennsylvania Electric Company. The System has total assets of \$4.6 billion, making it the nation's 14th largest investor-owned electric utility.

The GPU companies depend primarily on coal and nuclear energy for the generation of electricity. The generation mix in 1978 was 34 per cent nuclear, 57 per cent coal and 9 per cent oil.

The service territories and the characteristics of the individual operating companies are summarized on page 16 of the GPU annual report which is attached.

Under the Holding Company Act the member companies of the GPU System are required to be interconnected and to plan on an overall system basis. The parent company, GPU, owns the common stock of the three operating utilities and provides the new equity capital necessary to build the facilities required to serve the increasing needs of the customers. The GPU supplied common stock equity, along with bond and preferred stock issued by each operating company, maintain a balanced capital structure as net investment increases.

Each of the operating companies has responsibility for the full range of operations necessary to serve the customers. The operating company president, supported by a complement of officers, manages an integrated operation that includes generation, transmission and distribution, customer service, and administrative functions. Each operating company maintains separate property, expense, and revenue accounting and is subject to rate regulation by its cognizant state utility commission.

The overall GPU structure includes the GPU Service Corporation, which has the lead responsibility for system planning, finance, and rate case matters. It also provides services to the operating companies in areas where such services are more cost

effective on a centralized basis. These services include generation engineering and construction management, information services, and generation and transmission dispatch. In addition the Service Corporation provides a mechanism for system-wide sharing of experience, for providing analytical and technical expertise, and for formulating system-wide policies. The Service Corporation is responsible to a board of directors comprised of the three operating company presidents and the three senior officers of GPU.

The overall organization structure of the GPU System is depicted on Figure 1.

#### GPU NUCLEAR BACKGROUND

The background of the GPU companies in nuclear power spans a period of 18 years from Saxton thru Three Mile Island-2. This experience in terms of the specific plants is enumerated below:

##### SAXTON NUCLEAR STATION, SAXTON, PA.

The Saxton Station was a 5 MWe experimental nuclear reactor of the Pressurized Water type. It was the fifth U.S. nuclear reactor to operate on a utility system and conducted a series of experiments that provided training and experience to utility personnel across the country.

- . The station was owned and operated by the Saxton Nuclear Experimental Corporation (SNEC), formed by the General Public Utilities subsidiary companies
- . April 13, 1962 -- Criticality achieved
- . May 1972 -- Retired from service

GENERAL PUBLIC UTILITIES CORP.

W. G. Kuhns - Chairman  
Chief Executive Officer

H. Dieckamp - President  
Chief Operating Officer

GPU SERVICE CORPORATION

H. Dieckamp  
President

PENNSYLVANIA  
ELECTRIC COMPANY

W. Verrochi  
President

METROPOLITAN  
EDISON COMPANY

W. Creitz  
President

JERSEY CENTRAL  
POWER & LIGHT COMPANY

S. Bartnoff  
President

OYSTER CREEK NUCLEAR GENERATING STATION, LACEY TOWNSHIP, N.J.

Oyster Creek is a 650 MWe Boiling Water Reactor. It has been called the first truly commercial nuclear plant to be operated on a utility system. Owner and operator is Jersey Central Power and Light Company.

- . December 14, 1964 -- Construction permit granted
- . April 1969 -- Provisional operating license granted
- . May 3, 1969 -- Criticality achieved
- . December 23, 1969 -- Commercial operation
- . 34,485,220 Net Mwhr generated December 1969 - April 1979
- . Cumulative capacity factor 69.5

THREE MILE ISLAND NUCLEAR GENERATING STATION UNIT 1, MIDDLETOWN, PA.

TMI, Unit 1 is an 819 MWe Pressurized Water Reactor. This plant is owned jointly by the GPU operating companies (50 per cent by Metropolitan Edison Company, 25 per cent by Jersey Central Power and Light Co., and 25 per cent by Pennsylvania Electric Co.). The plant is operated by Metropolitan Edison Co.

- . August 1, 1967 -- Began construction
- . May, 1968 -- Provisional construction permit granted
- . April 19, 1974 -- Operating license granted
- . June 5, 1974 -- Criticality achieved
- . September 1974 -- Commercial operation
- . 24,353,005 megawatt hours generated to date
- . Cumulative capacity factor 76.7

### THREE MILE ISLAND NUCLEAR GENERATING STATION UNIT 2, MIDDLETOWN, PA.

TMI, Unit 2 is a 906 MWe Pressurized Water Reactor. This plant is jointly owned by the GPU operating companies (50 per cent by Metropolitan Edison Company, 25 per cent by Jersey Central Power and Light Co., and 25 per cent by Pennsylvania Electric Co.). The plant is operated by Metropolitan Edison Co.

- . November 4, 1969 -- Construction permit granted
- . February 8, 1978 -- Operating license granted
- . March 28, 1978 -- Criticality achieved
- . December 30, 1978 -- Commercial operation
- . 1,336,840 megawatt hours generated to date
- . Cumulative capacity factor 69.0

### FORKED RIVER NUCLEAR GENERATION STATION

Forked River is to be an 1120 MWe Pressurized Water Reactor. The owner and operator is Jersey Central Power and Light Co.

- . July, 1973 -- Construction permit granted
- . Under construction (delayed)
- . Operation -- Late 1980's

### PERSONNEL RESOURCES

GPU's personnel resources associated with its nuclear activities are made up of the permanently assigned staff at the operating plants, i.e.: 277 at Oyster Creek and 534 at Three Mile Island, plus a major portion of the generation division staffs of Jersey Central (72), Met-Ed (94), and GPU Service Corporation (251). A reasonable estimate of the fraction of these generation division



staff personnel assigned to nuclear work would be about two thirds. Thus the GPU personnel resources directly applied to nuclear work is about 1100 people.

#### NUCLEAR PLANT CONSTRUCTION

The GPU Service Corporation is involved in nuclear plant construction in two principal ways:

- 1) Engineering, procurement, and construction management of new nuclear generating plants
- 2) Services in support of operating nuclear plants

Historically, the management of the engineering, procurement, and construction of new nuclear generating plants was undertaken on a centralized basis beginning in about 1967 with the formation of what was then called the Nuclear Activities Group in order to be able to provide long term continuity to the effort, to be better able to provide the requisite range of skills, and to avoid the need to reproduce such skills in each of the operating companies. This responsibility is carried forward today by the Generation Division of the GPU Service Corporation under R. C. Arnold, vice president.

The Operating company, in the case of TMI-1 and 2, Metropolitan Edison, is the licensee and remains in the direct line of responsibility to the NRC for all licensing matters. The management of all technical work during the engineering, procurement, and construction phase is in effect delegated to the Service Corporation. The Service Corporation v.p generation assisted by a staff of program managers and engineering support personnel manages the major

contractors responsible for the overall project. In the case of TMI-2, the major contractors were:

- a) Engineering - Burns & Roe
- b) Nuclear Steam Supply System - Babcock & Wilcox
- c) Construction - United Engineers and Constructors

The GPU Service Corporation acting for the plant owners and the operator performs the functions of: integrating the overall technical effort; providing technical direction in areas of owner preference; monitoring of progress; review and acceptance of the work product of the contractors; resolution of problems; establishment of budgets and schedules, and thereby generally managing the total effort.

The plant operator (in the case of TMI-2, Met-Ed) participates in design reviews, but places its major effort on preparation for plant operations with prime emphasis on staffing, operator training and procedure preparation. During the plant start-up phase, the Service Corporation Start-up and Test personnel plan and supervise a start-up test program which has been designed to test the operability of all plant systems in both normal and off normal conditions. The manual skills required are supplied largely by the plant operator. During the Start-up and Test Program individual plant systems are tested, reviewed for quality control documentation, and upon completion of test turned over to the plant staff for operation.

Upon receipt of an operating permit (February 8, 1978 for TMI-2) the Start-up Program proceeds with fuel loading, followed by a

sequence of planned steps toward full power operation, including a number of tests designed to check system response to off normal or transient conditions.

Toward the end of the Start-up and Test Program the v.p. generation of the Service Corporation convenes a Commercial Review Board comprised of senior personnel from the GPU operating company management, the Service Corporation management, and the management of other GPU owning companies to review the results and the completeness of the test program prior to the plant being placed in commercial service. In the case of TMI-2, this review was completed on December 29, 1978 and the plant entered commercial service on December 30, 1978.

#### NUCLEAR PLANT MANAGEMENT REVIEW

In order to maintain top management awareness of nuclear operations within GPU, a Nuclear Plant Management Review policy was established in May 1975. It has been the objective of this policy to visit each plant annually with the following objectives:

- a) Increase awareness of operational and safety problems
- b) Increase cross company communications of nuclear matters
- c) Provide awareness of key nuclear personnel and related problems

The participants in the Management Review include the presidents and generation vice presidents of GPU and each of the plant's owning companies.

The agenda for each review was set forth to include a) organization and manpower, b) operational history and status, c) reported incidents, d) NRC inspections, e) plant tour, f) personnel exposure history, and g) plant staff comments on problems and recommendations.

In order to maintain continuing awareness each plant staff has routinely distributed to the Management Review participants copies of key letters on NRC inspections, and other significant events.