JULY 01 1980

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Mr. Richard P. Crouse
Vice President, Nuclear
Toledo Edison Company
Edison Plaza
300 Madison Avenue
Toledo, Ohio 43652

Dear Mr. Crouse:

On May 13, 1980 you informed us of the failure of a holddown spring on a fuel assembly which was observed during underwater inspections of the fuel in the reactor vessel during the current refueling outage. Based upon your subsequent inspections, additional holddown spring failures were identified and reported.

On June 10, 1980, a meeting was held in Bethesda with members of your staff and B&W to discuss the status of the inspections. The presentation of the meeting was organized to address a set of questions that we had informally transmitted to your staff prior to the meeting. Although these questions were addressed on June 10, we would like to formally document your responses. It is requested that you provide responses to the enclosed questions in time for us to include an evaluation of this issue in the Safety Evaluation Report for your reload.

Sincerely,

Original signed by
Robert W. Reid

Thomas M. Novak, Assistant Director
for Operating Reactors
Division of Licensing

Enclosure:
Holddown Spring
Questions

cc w/enclosure:
See next page

OFFICE ▶	ORB#4:DL	C-ORB#4:DL	AD-OR:DL				
SURNAME ▶	[illegible]	RReid	TNovak				
DATE ▶	6/ /80	6/ /80	6/ /80				

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

July 1, 1980

Docket No. 50-346

Mr. Richard P. Crouse
Vice President, Nuclear
Toledo Edison Company
Edison Plaza
300 Madison Avenue
Toledo, Ohio 43652

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Sincerely,

Thomas M. Novak, Assistant Director
for Operating Reactors
Division of Licensing

Enclosure:
Holddown Spring
Questions

cc w/enclosure:
See next page

Toledo Edison Company

cc w/enclosure(s):

Mr. Donald H. Hauser, Esq.
The Cleveland Electric
Illuminating Company
P. O. Box 5000
Cleveland, Ohio 44101

Gerald Charnoff, Esq.
Shaw, Pittman, Potts
and Trowbridge
1800 M Street, N.W.
Washington, D.C. 20036

Leslie Henry, Esq.
Fuller, Seney, Henry and Hodge
300 Madison Avenue
Toledo, Ohio 43604

Mr. Robert B. Borsum
Babcock & Wilcox
Nuclear Power Generation Division
Suite 420, 7735 Old Georgetown Road
Bethesda, Maryland 20014

Ida Rupp Public Library
310 Madison Street
Port Clinton, Ohio 43452

President, Board of County
Commissioners of Ottawa County
Port Clinton, Ohio 43452

Attorney General
Department of Attorney General
30 East Broad Street
Columbus, Ohio 43215

Harold Kahn, Staff Scientist
Power Siting Commission
361 East Broad Street
Columbus, Ohio 43216

Mr, Rick Jagger
Industrial Commission
State of Ohio
2323 West 5th Avenue
Columbus, Ohio 43216

Mr, Ted Myers
Licensing Engineer
Toledo Edison Company
Edison Plaza
300 Madison Avenue
Toledo, Ohio 43652

U. S. Nuclear Regulatory Commission
Resident Inspector's Office
5503 N. State Route 2
Oak Harbor, Ohio 43449

Director, Technical Assessment
Division
Office of Radiation Programs
(AW-459)
U. S. Environmental Protection Agency
Crystal Mall #2
Arlington, Virginia 20460

U. S. Environmental Protection Agency
Federal Activities Branch
Region V Office
ATTN: EIS COORDINATOR
230 South Dearborn Street
Chicago, Illinois 60604

Ohio Department of Health
ATTN: Director of Health
450 East Town Street
Columbus, Ohio 43216

Enclosure

HOLD-DOWN SPRING QUESTIONS TO LICENSEES

1. (If the reactor is down for refueling and the reactor vessel head is off) Examine all fuel assembly holddown springs in the core and in the spent fuel pool and report the number and extent of damage on the springs and affected assembly components.

or

(Alt.) (If the reactor is operating.) Review video tapes of the core from the last refueling and examine all assemblies in the spent fuel pools. Report the number and extent of damage on the springs and affected assembly components.

2. Provide a discussion of the safety significance of operating with one or more broken springs in the core. Your discussion should include, but not necessarily be limited to the following:

   a. Assume the holddown spring is broken, provide an estimate of the flow conditions under which the assemblies would be levitated. (Provide the value of the force required to lift the assembly, the flow conditions under which that force would be supplied, the number of coolant pumps that would be in operation under such conditions, and the schedule of reactor operations under which such conditions might have been achieved.) Contrarily, demonstrate the margin between the assembly weight and the calculated maximum applied lift-off force, if there is such margin.

   b. Have any loose assembly parts (i.e., broken springs, pieces of cladding) been observed anywhere in the primary system? Describe your methods for loose part detection. Are there installed noise detectors capable of detection of broken springs, pieces of cladding, or vibrating assemblies?

   c. Have there been any excore or in-core neutron detector indications of levitated assemblies? Describe the expected reactivity effects that would result from lift-off or reseating of assemblies with broken hold-down springs. What efforts are being utilized to detect loose assemblies by either nuclear or mechanical monitoring devices?

   d. Have there been any observed indications of lateral repositioning of loose assemblies?. Describe the methods used to detect lateral assembly motion. Describe the degree of lateral repositioning that is physically (dimensionally) possible after lift-off. What are the postulated worst-case effects of a laterally displaced assembly?

   e. (i) Describe the degree of "worst-case" mechanical damage that would be expected as a result of movement of a "loose" assembly (one with a broken spring) against adjacent assemblies, core baffle, or other core components.

      (ii) Discuss the results of flow tests or other experiments that have provided measurements of axial or lateral vibratory motion of an assembly after lift-off or that would otherwise support the response to Q 2.e(i).