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 RECIP. NAME: RECIPIENT AFFILIATION: Document Control Branch (Document Control Desk)

SUBJECT: Requests approval to revise tornado design criteria, per Reg Guide 1.76, Section C.1.2 for rotational & translational velocities. "Justification for Revised Tornado Design Criteria" encl.

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June 7, 1991
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PDR ADOCK 05000397
PDR

Docket No. 50-397

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: NUCLEAR PLANT NO. 2, OPERATING LICENSE NPF-21
REQUEST FOR APPROVAL TO REVISE TORNADO DESIGN CRITERIA

In accordance with the guidance of Regulatory Guide 1.76, Section C.1.2 the Supply System hereby requests approval to revise the WNP-2 tornado design criteria.

WNP-2 current tornado design criteria, as stated in FSAR 2.3.1.2.1.3 and 3.3.2.1, are for wind speeds of 300 and 60 mph rotational and translational respectively with a pressure drop of 3 psi to occur in 3 seconds. These criteria were found acceptable by the Staff as documented in the WNP-2 SER for the Operating License (NUREG-0892); section 3.3.2 of the original issue. The Supply System proposes to change the design criteria to 135 and 45 mph rotational and translational velocities with a pressure drop of 0.65 psi occurring at 0.29 psi/sec.

Relative to the requirements of Regulatory Guide 1.76 the current design requirements represent an over commitment in that WNP-2 is a Region III site for which the criteria are 190 and 50 mph and a 1.5 psi pressure drop at 0.6 psi/sec. FSAR 3.3.2.4 and Appendix C.3 discuss the WNP-2 design relative to Regulatory Guide 1.76. It is also apparent that the proposed criteria are less than those proposed by the Regulatory Guide for a Region III plant.

In addition, FSAR 3.5.1.4 establishes the following design basis tornado generated missiles:

<u>Missile</u>	<u>Weight (lbs)</u>	<u>Dimensions</u>	<u>Horizontal Impact Velocity (ft/sec)</u>
Utility Pole	1600	14" dia x 35 ft	241
Steel Rod	8	1" dia x 3 ft	259

The NRC found these missiles acceptable in SER 3.5.1.4.

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REQUEST FOR APPROVAL TO REVISE
TORNADO DESIGN CRITERIA

Based upon the guidance of the above mentioned Regulatory Guide section, NRC approval of the use of revised tornado design criteria is requested. The criteria are:

Wind Speeds

180 mph maximum
135 mph rotational
45 mph translational

Pressure Drop

0.65 psi
at 0.29 psi/sec

Missiles

<u>Missile</u>	<u>Weight (lbs)</u>	<u>Dimensions</u>	<u>Horizontal Impact Velocity (ft/sec)</u>
Wood Plank	115	3.6"x 0.94'x 12' long	167
6" Sch 40 Pipe	287	6.6" dia x 15' long	17
1" Steel Rod	8.8	1" dia x 3' long	20
12" Sch 40 Pipe	750	12.75" dia x 15' long	13

The utility pole and automobile are not included as they are not considered to be credible missiles for wind speeds of less than 200 mph.

The selection of these criteria is based on extensive studies which define site specific tornado hazards for the Hanford area. These include Department of Energy (DOE) sponsored studies of various DOE nuclear related sites including the Hanford Site and NRC sponsored studies of tornado climatology in the United States. These and other studies are discussed in detail in the attached report titled "Justification for Revised Tornado Design Criteria."

The Supply System believes the proposed tornado design criteria will continue to provide adequate protection to safety related structures, systems and components such that, for the most severe tornadoes that would be reasonable to postulate to occur near the site, the safety functions of these structure, systems and components will not be impacted.

Page Three

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The initial application of the revised tornado design criteria may be to provide for hard bolting of the Reactor Building roof to improve its reliability for differential and straight wind loads. To support this potential change a response to this request by September 1, 1991 is requested.

Very truly yours,



G. C. Sorensen, Manager
Regulatory Programs

AGH/bk
Attachments

cc: JB Martin - NRC RV
NS Reynolds - Winston & Strawn
PL Eng - NRC
DL Williams - BPA/399
NRC Site Inspector - 901A