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

October 19, 1989

TO: ALL LICENSEES OF OPERATING REACTORS AND HOLDERS OF CONSTRUCTION PERMITS*

SUBJECT: POTENTIAL FOR INCREASED ROOF LOADS AND PLANT AREA FLOOD RUNOFF DEPTH AT LICENSED NUCLEAR POWER PLANTS DUE TO RECENT CHANGE IN PROBABLE MAXIMUM PRECIPITATION CRITERIA DEVELOPED BY THE NATIONAL WEATHER SERVICE (GENERIC LETTER 89-22)

This letter is to inform you that the NRC staff has adopted for future plants the latest probable maximum precipitation (PMP) criteria published by the National Oceanic and Atmospheric Administration (NOAA), National Weather Service (NWS) to establish acceptable design configurations for safety-related nuclear power plant facilities. The staff has been using the PMP concept in plant flood design for well over 15 years. The criteria appear in Regulatory Guides, ANSI Standards, and Standard Review Plans (NUREG-0800) and were based primarily on procedures established in the 1940s and 1950s by the U.S. Army Corps of Engineers and National Weather Service (NWS).

Since 1977, more recent PMP criteria have been published by the National Oceanic and Atmospheric Administration (NOAA), National Weather Service. These criteria are to be used to evaluate the degree of licensee compliance with the General Design Criterion #2 App A to 10 CFR Part 50. The new criteria are contained in NOAA/NWS Hydrometerological Reports (HMR) No. 49 (1977), No. 51 (1978), No. 52 (1982), No. 53 (1980) and No. 55 (1984). One of the more significant changes in the new HMRs is that they now provide PMP estimates for drainage areas as small as 1 square mile and for durations as small as 5 minutes. The previous reports generally only provided PMP estimates for areas of 10 square miles or greater and durations of 6 hours or more. There were empirical methods to subdivide the 6 hour duration to smaller increments, but there was never any methodology to estimate PMP for areas less than 10 square miles. Thus, the 10 square mile PMP values were used for site and roof drainage design. Current 1 square mile short duration PMP estimates are larger than those previously used.

Staff has revised (Revision 3) Sections 2.4.2, "Floods," and 2.4.2, "Probable Maximum Floods (PMF) on Streams and Rivers," of the Standard Review Plan (NUREG-0800) to formally incorporate the latest NWS reports into the licensing

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1* Five plants, Byron, Braidwood, Vogtle, South Texas, and River Bend, fully meet the new PMP Criteria and the licensees for these five plants may disregard this letter.

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review process. In general, the latest NWS criteria call for higher rainfall intensities over shorter time intervals and smaller areas than have been previously considered. In some cases, such events could result in higher site flooding levels and greater roof ponding loads than have been used in previous design studies.

This information is provided for your review and determination of appropriate action, if any. No submittal is required.

Sincerely,

James G. Partlow
Associate Director for Projects
Office of Nuclear Reactor Regulation

Enclosure:
List of Most Recently Issued
Generic Letters

Technical Contact:
S. Chan, ESGB/NRR
492-0830

LIST OF RECENTLY ISSUED GENERIC LETTERS

Generic Letter No.	Subject	Date of Issuance	Issued To
89-22	POTENTIAL FOR INCREASED ROOF LOADS AND PLANT AREA FLOOD RUNOFF DEPTH AT LICENSED NUCLEAR POWER PLANTS DUE TO RECENT CHANGE IN PROBABLE MAXIMUM PRECIPITATION CRITERIA DEVELOPED BY THE NATIONAL WEATHER SERVICE (GENERIC LETTER 89-22)	10/19/89	ALL LICENSEES OF OPERATING REACTORS AND HOLDERS OF CONSTRUCTION PERMITS (EXCEPT BYRON BRAIDWOOD, VOGTLE, SOUTH TEXAS, AND RIVER BEND)
89-21	REQUEST FOR INFORMATION CONCERNING STATUS OF IMPLEMENTATION OF UNRESOLVED SAFETY ISSUE (USI) REQUIREMENTS	10/19/89	ALL HOLDERS OF OPERATING LICENSES AND CONSTRUCTION PERMITS FOR NUCLEAR POWER REACTORS
89-20	PROTECTED AREA LONG-TERM HOUSEKEEPING	09/26/89	ALL FUEL CYCLE FACILITY LICENSEES WHO POSSESS, USE, OR PROCESS FORMULA QUANTITIES OF STRATEGIC SPECIAL NUCLEAR MATERIAL
89-19	REQUEST FOR ACTION RELATED TO RESOLUTION OF UNRESOLVED SAFETY ISSUE A-47 "SAFETY IMPLICATION OF CONTROL SYSTEMS IN LWR NUCLEAR POWER PLANTS" PURSUANT TO 10 CFR 50.54(f)	09/20/89	ALL LICENSEES OF OPERATING REACTORS, APPLICANTS FOR OPERATING LICENSES AND HOLDERS OF CONSTRUCTION PERMITS FOR LIGHT WATER REACTOR NUCLEAR POWER PLANTS
89-18	RESOLUTION OF UNRESOLVED SAFETY ISSUE A-17, "SYSTEMS INTERACTIONS IN NUCLEAR POWER PLANTS ACCESSION NUMBER IS 8909070029	09/06/89	ALL HOLDERS OF OPERATING LICENSES OR CONSTRUCTION PERMITS FOR NUCLEAR POWER PLANTS
89-17	PLANNED ADMINISTRATIVE CHANGES TO THE NRC OPERATOR LICENSING WRITTEN EXAMINATION PROCESS - GENERIC LETTER 89-17	09/06/89	ALL HOLDERS OF OPERATING LICENSES OR CONSTRUCTION PERMITS FOR PWRS AND BWRS AND ALL LICENSED OPERATORS
89-16	INSTALLATION OF A HARDENED WETWELL VENT (GENERIC LETTER 89-16)	09/01/89	ALL GE PLANTS

review process. In general, the latest NWS criteria call for higher rainfall intensities over shorter time intervals and smaller areas than have been previously considered. In some cases, such events could result in higher site flooding levels and greater roof ponding loads than have been used in previous design studies.

This information is provided for your review and determination of appropriate action, if any. No submittal is required.

Sincerely,

ORIGINAL SIGNED BY JAMES G. PARTLOW

James G. Partlow
Associate Director for Projects
Office of Nuclear Reactor Regulation

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Generic Letters

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S. Chan, ESGB/NRR
492-0830

DISTRIBUTION:
Central Files
NRC PDR
PD4 Reading
P. O'Connor
F. Hebdon
G. Holahan
F. Miraglia
C. Berlinger
J. Partlow

I believe the generic letter is appropriately calls for licensees to do a "review and determination" of appropriate actions. If we are not imposing the same or similar plants we shouldn't suggest that they need to do something. The wording in the generic letter is reasonably close to the March 10 1988 comments from S. Smith to E Beckjord and therefore may be acceptable to the senior management.

10/11/89

10/12/89

OFC	:PD4/DRSP/PM	:PD4/DRSP/D	:(A)NRR4/DRSP	:(A)DRSP/D	:(A)ADT	:OGCB/DOEA/C	:ADP
NAME	:PO'Connor:bj	:FHebdon	:GHolahan	:GHolahan	:FMiraglia	:CBerlinger	:JPartlow
DATE	:9/27/89	:9/27/89	:10/11/89	:10/11/89	:10/12/89	:9/27/89	:10/13/89

with comment 10/12 #1

with correction noted

OFFICIAL RECORD COPY
Document Name: GENERIC LETTER/PD4

DOCUMENT NAME:
GENERIC LETTER/PD4

ORIGINATOR NAME *:
P. O'Connor x23026

SECRETARY NAME:
Beverly/Celeste x21340

SUBJECT:
GENERIC LETTER 89-XX RE: DESIGN FOR PROBABLE MAXIMUM ~~PRESCRIPTION~~ precipitation

	NAME	DATE
1.	P. O'Connor	PWOC 9/27/89
2.	F. Hebdon	W. 9/27/89
3.	G. Holahan #3 9/29	10/11/89
4.	G. Holahan	10/11/89
5.	F. Miraglia	10/12
6.	C. Berlinger	C.H.B. 9/27/89
7.	J. Partlow	
7.	Secretary - Dispatch	

PLEASE DO NOT REMOVE THIS SHEET FROM PACKAGE

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* CAN THIS DOCUMENT BE DELETED FROM SYSTEM? YES ___ NO ___
SHOULD THIS DOCUMENT BE ARCHIVED? YES ---- NO ___

Date 10 + 19