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 STN-50-529 Palo Verde Nuclear Station, Unit 2, Arizona Publi 05000529
 STN-50-530 Palo Verde Nuclear Station, Unit 3, Arizona Publi 05000530

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SUBJECT: Forwards addl info re seismic adequacy of nylon cable ties
 at plant,per 890926 telcon.

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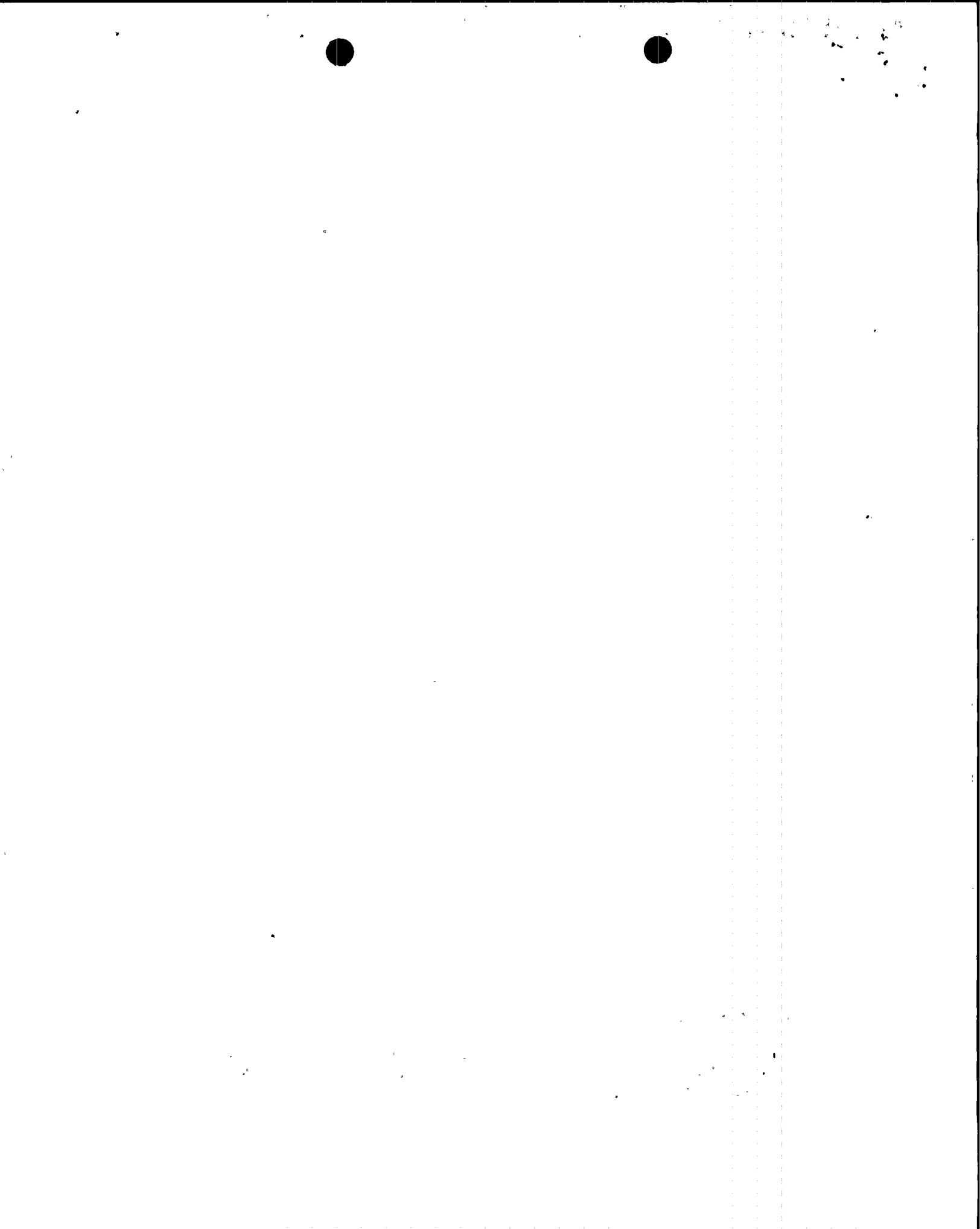
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WILLIAM F. CONWAY
EXECUTIVE VICE PRESIDENT
NUCLEAR

161-02806-WFC/RAB
January 26, 1990

Docket Nos. STN 50-528/529/530

Document Control Desk
U. S. Nuclear Regulatory Commission
Mail Station P1-37
Washington, D. C. 20555

Reference: Letter from D. B. Karner, APS to USNRC,
161-01819 dated April 4, 1989.
Subject: SSFI Cable Support Evaluation
File: 89-056-026

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Seismic Adequacy of Nylon Cable Ties at PVNGS

During a conference call on September 26, 1989, the staff requested additional information concerning the cable support evaluation provided in the referenced letter. The staff requested information concerning location of cable ties in vertical runs other than previously reported and the design basis for such a use.

The attachment to this letter resulted from a walkdown of the PVNGS Units and responds to the questions raised in the phone call.

If you have any further questions, please call R. A. Bernier at (602) 340-4295.

Sincerely,

W. F. Conway for WFC

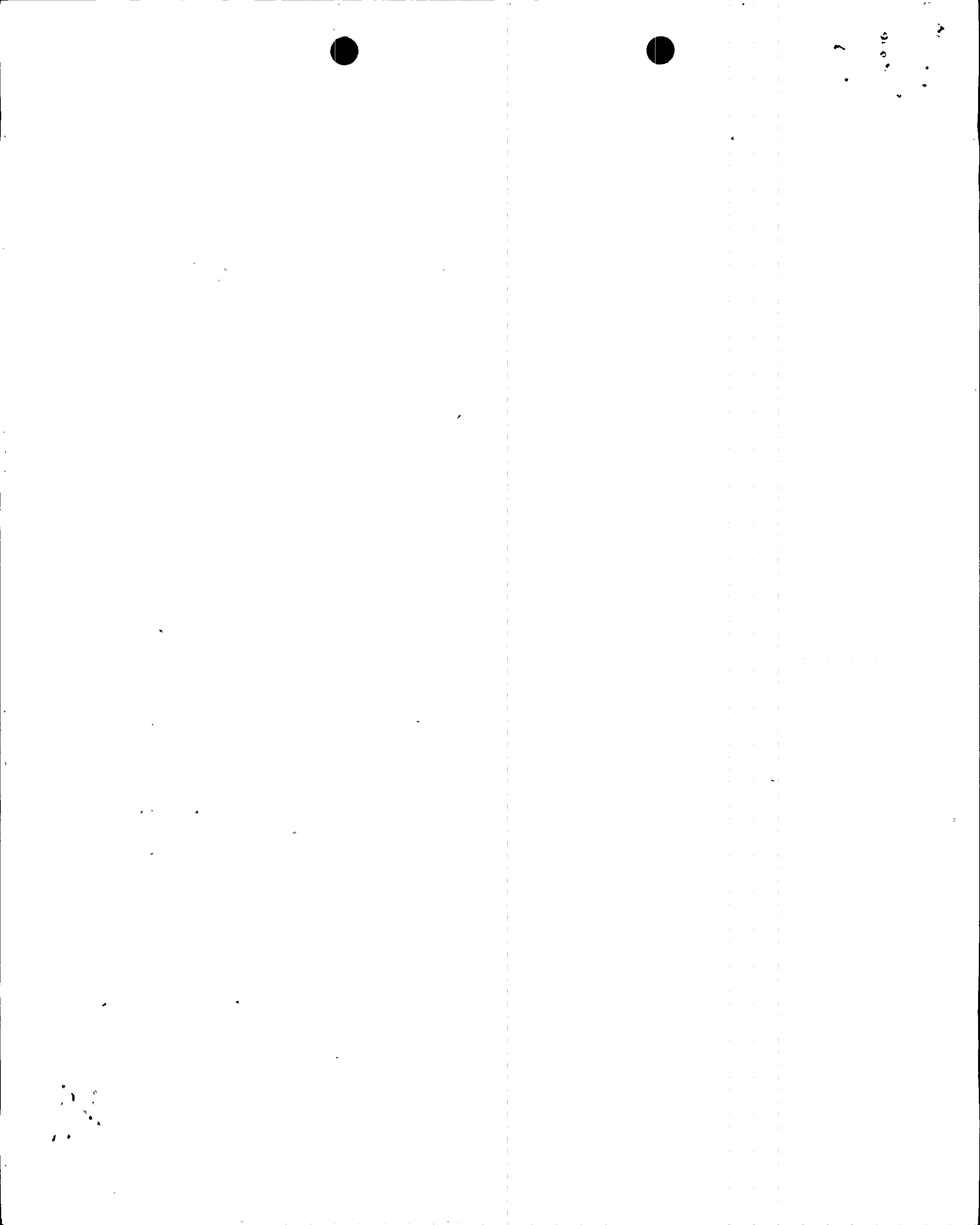
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Attachment

cc: J. B. Martin
T. L. Chan
M. J. Davis
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A. H. Gutterman

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PDR ADCK 05000528
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REQUEST FOR ADDITIONAL INFORMATION

The NRC requested per a telephone conversation (Reference: Conversation Memorandum between R. A. Bernier and M. J. Davis dated September 26, 1989) clarification to the previous APS submittal (Reference: Letter #161-01819-DBK/JMQ dated April 4, 1989) on nylon cable ties. The NRC inquired whether nylon cable ties were used on vertical cable tray runs in locations other than stated in the APS submittal. In addition, the NRC inquired as to the Design Basis for nylon cable tie usage in these locations.

In response to the above NRC question concerning the locations of the nylon cable ties, the following is a tabulation of the various buildings along with a determination of cable tie use:

1. CONTAINMENT BUILDING: Nylon cable ties are not utilized inside of the containment building on Safety-Related cables.
2. MAIN STEAM SUPPORT STRUCTURE (MSSS): There are no nylon cable ties utilized for Safety-Related cables. All the Safety-Related cables in this area are routed through conduit.
3. AUXILIARY BUILDING: Nylon cable ties are used in this building.
4. CONTROL BUILDING: Nylon cable ties are used in this building.
5. DIESEL GENERATOR BUILDING: The only Safety-Related cable trays located in the D/G Building are in the control room and are mounted in the horizontal position. Nylon cable ties are used in these trays. The remaining Safety-Related cables are routed through conduit.
6. FUEL BUILDING: Nylon cable ties are used in this building.

Based on the above, the Containment Building, the MSSS, and the Diesel Generator Building will not be considered for further evaluation. These buildings have their Safety-Related cables routed through conduit, horizontal cable trays or do not utilize nylon cable ties. The remaining three buildings will be further evaluated. As stated above, the NRC inquired as to the Design Basis for the nylon cable ties. The environmental Design Basis for the three (3) specified buildings are contained in the UFSAR Table 3E-1. This Table contains the environmental parameters required for a Normal/Abnormal, and an Accident/Post Accident Environmental conditions. In addition, the Design Criteria Manual Section 1.6, Table 1-3, contains the postulated event combinations which must be considered in determining the availability of equipment/systems necessary to effect safe shutdown. These references were utilized in the evaluation of the nylon cable ties. Per the Design Criteria Manual Table 1-3, a LOCA/MSLB and a Seismic event are not considered as postulated combinations. Therefore, the UFSAR Table 3E-1 Normal/Abnormal environmental parameters pertaining to the cable ties in the Auxiliary, Fuel and Control Buildings will be utilized. These Normal/Abnormal parameters are as follows:

	<u>AUXILIARY</u>	<u>FUEL</u>	<u>CONTROL</u>
TEMPERATURE (°F)	50-104	50-104	40-104
RELATIVE HUMIDITY	20-90%	20-90%	20-90%
RADIATION (RADS) (40 Year Integrated Dose)	3.5E4	<1E3	<1E3

The above Normal/Abnormal environmental parameters were compared against the physical characteristics of Panduit nylon cable ties that were transmitted to the NRC in the above reference. The comparison indicates that the Normal/Abnormal environmental parameters are enveloped by the physical characteristics of the nylon cable ties. In addition, actual ambient and nylon cable tie (temperature detector was placed directly in contact with the cable tie) temperatures were taken of power cables with the results recorded on Attachment 2. The actual ambient and nylon cable tie temperatures as recorded on Attachment 2 are within the Normal/Abnormal temperatures identified above.

Therefore, based on the above evaluation and the previously transmitted reports, the nylon cable ties have sufficient strength to retain the cables in the trays during a seismic event.

ATTACHMENT 2

NYLON CABLE TIE TEMPERATURE READINGS

<u>CABLE TRAY I.D. NO.</u>	<u>LOCATION</u>	<u>TEMPERATURE</u>	
		<u>AMBIENT</u>	<u>TIE WRAP</u>
2EZA2AATGAM	Aux. Bldg. 120' North Wrap	84.2°F	85.5°F
2EZA2CNTFBE	Aux. Bldg. 120' Corridor	79.6°F	80.0°F
2EZF2BNTFFC	F.H.B. 120'	69.9°F	70.2°F
2EZA2BNTFBF	Aux. Bldg. 120' East Wrap	85.8°F	88.7°F
2EZA1DBTXCF	100' East Corridor Aux. Bldg.	78.4°F	79.4°F
2EZACDBTCAW	100' East Corridor Aux. Bldg.	77.2°F	77.6°F
2EZA1BBTKAN	100' East Pene. Aux. Bldg.	92.8°F	93.6°F
2EZA1ANTYAA	100' West Pene. Aux. Bldg.	83.9°F	84.2°F
2EZA1ANTLBB	100' West Pene. Aux. Bldg.	84.7°F	84.9°F
2EZA1ANTAAC	100' West Pene. Aux. Bldg.	88.0°F	88.2°F

The readings were taken on 2/3-4/88. The M&TE was a Wahl, control number IC 4341 with a calibration due date of 2/13/88.

