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

AUTH.NAME AUTHOR AFFILIATION
 VAN BRUNT,E.E. Arizona Public Service Co.
 RECIP.NAME RECIPIENT AFFILIATION
 KNIGHT,G. Licensing Branch 3

SUBJECT: Forwards point by point comparison of special lifting devices against ANSI 14.6 & NUREG-0612 requirements, per 821118 commitment.

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Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

February 23, 1983
ANPP-23062 - WFQ/KEJ

Director of Nuclear Reactor Regulation
Attention: Mr. G. Knighton, Chief
Licensing Branch No. 3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: Palo Verde Nuclear Generating Station
(PVNGS) Docket Nos. STN-50-528-529-530
File: 83-056-026; G.1.01.10

- References:
1. Letter to T. H. Novak, NRC, from E. E. Van Brunt, Jr., APS, dated November 18, 1982.
 2. Letter to Director of Nuclear Reactor Regulations, from E. E. Van Brunt, Jr., APS dated January 12, 1983.
 3. Conference call between NRC, E. Licitra, F. Clemenson, T. Stickley, and APS', K. Jones and R. Badsgard, held July 29, 1982.

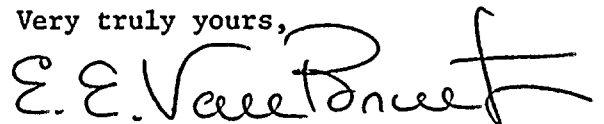
Dear Mr. Knighton:

In section 2.3.4 of Reference (1), APS committed to make a point-by-point comparison of the specifications of the special lifting devices designed by Bechtel Power Corporation with the requirements of ANSI N 14.6-1978 and Guideline 4 of NUREG-0612. The pertinent sections and information from ANSI N 14.6-1978 which the NRC requested APS address, were discussed in the conference call, (Reference (3)), held on July 29, 1982, between NRC and APS.

Please find attached our response to meet our previous commitment.

If you have any questions concerning this matter, please contact me.

Very truly yours,



E. E. Van Brunt, Jr.
APS Vice President,
Nuclear Projects
ANPP Project Director

EEVBJr/KEJ/sp
Attachment

cc: E. Licitra (w/a)
F. Clemenson "
K. Berlin "
A. C. Gehr "

B001

8303090194 830223
PDR ADCK 05000528
A PDR

STATE OF ARIZONA)
) ss.
COUNTY OF MARICOPA)

I, Edwin E. Van Brunt, Jr., represent that I am Vice President Nuclear Projects of Arizona Public Service Company, that the foregoing document has been signed by me on behalf of Arizona Public Service Company with full authority so to do, that I have read such document and know its contents, and that to the best of my knowledge and belief, the statements made therein are true.

Edwin E. Van Brunt, Jr.
Edwin E. Van Brunt, Jr.

Sworn to before me this 22nd day of February, 1983.

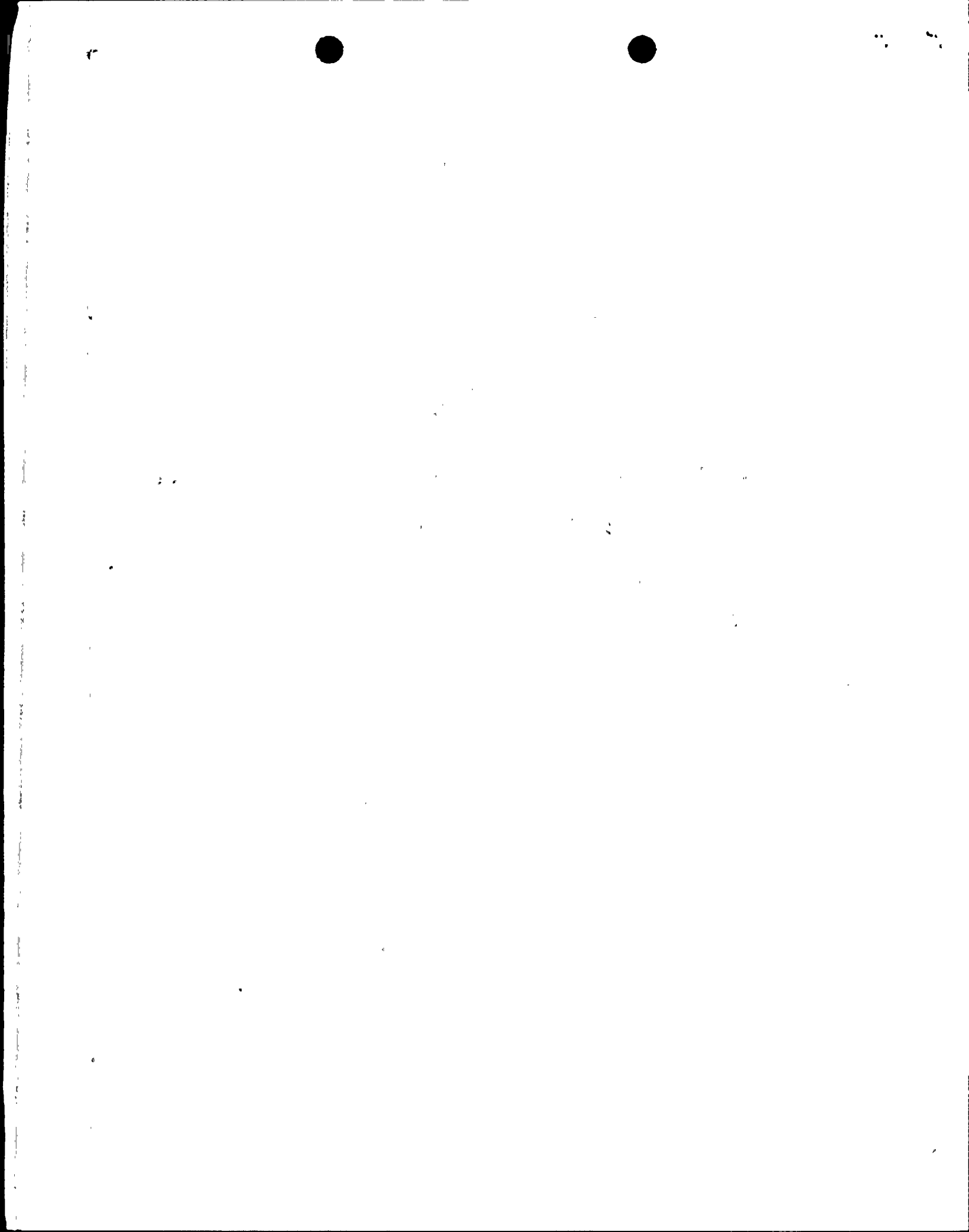
David P. Graham
Notary Public

My Commission expires:

My Commission Expires May 19, 1988

COMPARISON OF SPECIAL LIFTING DEVICES AGAINST ANSI 14.6 AND NUREG 0612 REQUIREMENTS

ANSI N146-1978 CHECKLIST SECTION	REQUIREMENT	REACTOR VESSEL MISSILE SHIELD LIFTING FRAME	C.E.D.M. CABLE SUPPORT STRUCTURE LIFTING ASSEMBLY	C.E.D.M. UPPER COLLECTING RING SUPPORT LIFTING RIG
	Bechtel Drawing(s)	13-C-ZCS-382 and 13-C-ZCS-585	13-C-ZCS-599	13-C-ZCS-695
	General Description	A-frame, with base plates and embedded anchor bolts, at both ends of a Pratt truss spreader with lifting jaws at midspan. The two side shields have lugs for open wire-rope sockets.	Lifting jaw assembly with four lugs for attaching open wire-rope sockets.	Wide flange spreader with lifting jaw at midspan and four lugs for attaching open wire-rope sockets.
3.1.1	Limitations on the use of the device	Rig is permanently fastened to the missile shield slab to preclude inadvertent use. Environmental conditions have been considered in the design.	Lift lugs are oriented to match the corresponding lugs on the lifted structure. Environmental conditions have been considered in the design.	Lift lugs are oriented to match the corresponding lugs on the lifted structure. Environmental conditions have been considered in the design.



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3.1.2	Identification of critical components and definition of critical characteristics	<p>PVNGS meets intent of this requirement. Components are procured & fabricated under quality class Q specs and the drawings further specify;</p> <ul style="list-style-type: none"> • Material identification, qualification, and control • Fabrication practices • In-process testing & inspection • Final product testing & inspection 	<p>PVNGS meets intent of this requirement. Components are procured & fabricated under quality class Q specs and the drawings further specify;</p> <ul style="list-style-type: none"> • Material identification • Fabrication practices • In-process testing & inspection • Final product testing & inspection 	<p>PVNGS meets intent of this requirement. Components are procured & fabricated under quality class Q specs and the drawings further specify;</p> <ul style="list-style-type: none"> • Material identification • Fabrication practices • In-process testing & inspection • Final product testing & inspection
3.1.3	Signed stress analyses which demonstrate appropriate margins of safety.	PVNGS complies with this requirement.	PVNGS complies with this requirement.	PVNGS complies with this requirement.
3.1.4	Indication of permissible repair procedures	PVNGS meets the intent of this requirement. All repairs require documented engineering review and approval via NCR's and/or SDDR's		
3.2.1	Use of stress design factors of 3 for minimum yield strength and 5 for ultimate strength	<p>The AISC specifies different allowable stresses for individual component behavior. The stresses for each component of the lifting device were compared with the appropriate AISC allowable stress, for the lifted load plus 25%.</p> <p>Factors of 3 for minimum yield strength and 5 for ultimate strength are inconsistent with AISC and were not considered in the design.</p>		

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3.2.4	Similar stress design factors for load bearing pins, extension links, and adaptors.	Same as 3.2.1	Same as 3.2.1	Same as 3.2.1
3.2.5	Wire rope or chain shall be in conformance with ANSI B30.9 - 1971	Not applicable to middle slab. For side slabs, PVNGS is in compliance. Factor of safety of 5 used, for lifted load plus 25% for impact, to select wire rope slings.	PVNGS is in compliance. Factor of safety of 5 used, for lifted load plus 25% for impact, to select wire rope slings.	PVNGS is in compliance. Factor of safety of 5 used, for lifted load plus 25% for impact, to select wire rope slings.
3.2.6	Subjecting materials to drop weight testing or charpy impact testing.	ASTM A516 plate exempt for all thicknesses for design temperature greater than 50°F per ASME Section VIII Div. 2 Par. AM21B. ASTM A36 plates and shapes and A540 pin not in conformance.	ASTM A516 plate exempt for all thicknesses for design temperature greater than 50°F per ASME Section VIII Div. 2 Par. AM21B. A540 pin not in conformance.	ASTM A36 plates and shapes and A540 pin not in conformance.

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3.3.6	Verification that remote actuating mechanisms securely engage or disengage	Not applicable	Not applicable	Not applicable
4.1	Fabricator's responsibilities	PVNGS is in compliance; see explanations below.		
4.1.3	Verify selection and use of material	All material specifications are indicated on drawings. Engineering approval is required for supplier deviations (substitutions).		
4.1.4	Compliance with fabrication practices	All applicable codes and standards are listed in the respective specifications/purchase orders.		
4.1.5	Qualification of welding procedures, welders, and welding operators	Specifications invoke AWS D1.1 structural welding code and require welding procedure qualification test records, welder qualification test records, non destructive test records and non destructive examination qualification test records.		
4.1.6	Provisions for a quality assurance program	Items are furnished under a quality class Q specification by suppliers with approved QA programs.		
4.1.7	Provisions for identification and certification of material	The specifications require that certificates of compliance and/or certified material test reports to be furnished by the supplier.		

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3.3.1	Consideration of problems related to possible lamellar tearing	Specifically addressed criteria for susceptible components on drawings include: <ul style="list-style-type: none"> • Inclusion shape control • U.T. of welds and heat affected zone (before and after) • Tensile test • Yield strength test • Minimum reduction of area 	PVNGS is in compliance. U.T. required for welds and heat affected zone (before and after welding).	PVNGS is in compliance. U.T. required for welds and heat affected zone (before and after welding).
3.3.4	Design shall assure even distribution of the load	Design assures compliance.	Design assures compliance.	Design assures compliance.
3.3.5	Retainers fitted for load carrying components which may be inadvertently disengaged	High strength bolted connections used for frames. Welded split ring keeper plates used for fitted groove in lift pin. Anchor bolts are torqued. Side shield wire rope slings are furnished by field.	Welded split-ring keeper plates used for fitted groove in lift pin. Spelter socket pins employ cotter key retainers.	Welded split-ring keeper plates used for fitted groove in lift pin. Spelter socket pins employ cotter key retainers.

COMPARISON OF SPECIAL LIFTING DEVICES AGAINST ANSI 14.6 AND NUREG 0612 REQUIREMENTS

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4.1.8	Verification that materials or services are produced under appropriate controls and qualifications.	Quality assurance requirements are imposed upon subtier suppliers. In-house inspections conducted by S.Q.R. and audits conducted by Q.C. and Q.A.		
5.1 (5.1.3, 5.1.4, 5.1.5.1, 5.1.5.2 5.1.6, 5.1.7)	Scheduled periodic testing, date of expiration, operating procedures, subpart/sub assy exchange, load limit markings, maintaining full record of history, removal from service	These requirements will be addressed in the PVNGS Maintenance Rigging procedure.		
5.2 (5.2.1, 5.2.2)	50% load test and NDT, qualification of replacement parts.	These requirements will be addressed in the PVNGS Maintenance Rigging procedure.		
5.3 (5.3.1, 5.3.2, 5.3.3, 5.3.6, 5.3.7)	Annual load test or inspection requirements, testing following major maintenance, testing after application of substantial stresses, visual inspection by operating personnel, visual inspection by maintenance or other non operating personnel.	Same as Section 5.1 and 5.2 above, except rigging inspections will also be addressed in crane operating procedures.		

