

**TRANSMITTAL OF MEETING HANDOUT MATERIALS FOR
IMMEDIATE PLACEMENT IN THE PUBLIC DOMAIN**

*This form is to be filled out (typed or hand-printed) by the person who announced the meeting (i.e., the person who issued the meeting notice). The completed form, and the attached copy of meeting handout materials, will be sent to the Document Control Desk on the same day of the meeting; under no circumstances will this be done later than the working day after the meeting.
Do not include proprietary materials.*

DATE OF MEETING

06/14/2003

The attached document(s), which was/were handed out in this meeting, is/are to be placed in the public domain as soon as possible. The minutes of the meeting will be issued in the near future. Following are administrative details regarding this meeting:

Docket Number(s)	<u>50-528, 50-529, and 50-530</u>
Plant/Facility Name	<u>Palo Verde Nuclear Generating Station</u>
TAC Number(s) (if available)	<u>MB6726, MB6727, and MB6728</u>
Reference Meeting Notice	<u>ML031270549 dated May 7, 2003</u>
Purpose of Meeting (copy from meeting notice)	<u>The staff requested the meeting to discuss the licensee's</u> <u>application dated November 7, 2002, to upgrade the</u> <u>core protection calculator system.</u>

NAME OF PERSON WHO ISSUED MEETING NOTICE

Jack Donohew

TITLE

Senior Project Manager

OFFICE

Office of Nuclear Reactor Regulation

DIVISION

Division of Licensing Project Management

BRANCH

Project Directorate IV

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Docket File/Central File
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DFOI



Core Protection Calculator PVNGS

Expectations and additional info. needed based on
review status – May 14, 2003

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Background

- Arizona Public Service (APS) Submittal (TS change request), CPC
 - Common Q system to replace existing digital platform
 - SER Plant Specific Action Item (PSAI) responses for Common Q
 - No Significant Hazards Review
- NRC provides initial set of RAI's to APS (3rd week March 03)
- Phone Con 3/27/03 (NRC, APS and Westinghouse)
 - NRC provided discussion and guide to what will be reviewed
 - NRC provided clarification to draft initial set of RAIs
 - NRC mentioned future intended visits to Westinghouse for software audit and PVNGS for review of APS involvement efforts for Common Q CPC procurement



Background

- Phone Con 4/24/03 (NRC, APS and Westinghouse)
 - NRC expressed concern about scheduling and lack of documentation available at Rockville.
 - NRC re-stated its intent to perform safety evaluation in a timely manner consistent with APS ability to respond.
 - NRC re-stated its intent to audit software and visit PVNGS as part of successful CPC review.
 - NRC expressed intent to visit PVNGS during Site Acceptance Test consistent with approval of use of Common Q as CPC.
 - APS and NRC discussed RAI questions



Documents needed

- NRC disseminated to APS first list of documents to be formally submitted
 - System Requirements (SysRS) spec for CPC, CEAC, Generic FPDS
 - Software Requirements spec (SRS) for CPC, CEAC, Generic FPDS
 - Hardware description document (HDD) CPC
 - Software Design description (SDD) DNBR and LPD Update and Static
 - CPC timing analysis
 - FMEA for Common Q CPCS
 - CPCS preliminary hazards analysis - ICE 37731 *
 - Functional Design requirements for a CPC - ICE 3208 *
 - Functional requirements for a CEAC - ICE 3234 *
 - Requirements traceability matrix *

* *Docs not available for initial review*



- APS expresses concern (May 9 or 12) about scope of review related to procedures requested
 - Need APS procedures that govern/manage the system life-cycle activities that are used to obtain the CPC.



Docs reviewed at Rockville (made available on April 29)

NRC review in varying levels of detail (from May 5)

- SysRS, SRS, SDD (DNBR and LPD) – static and update, HDD, FMEA, timing analysis, equipment layout and wiring diagrams.
- Test docs, including Factory Acceptance Test (FAT)



Results

- Some questions
 - The connection of the CPC to the PMS using TCP/IP, has this been reviewed for non-safety to safety effect?
 - Safety-Related MTP uses IRIG-B cards, are they safety related?
 - Safety-Related MTP uses Win NT, what is the impact to MTP function? And will Win NT be considered APS SIL 1 software?
 - Safety-related MTP and OM uses CI-527 cards, what is impact to MTP function?
 - Has the uncertainty analysis IAW procurement spec. been completed and what are the results?
 - Is software documentation as specified in procurement spec complete and correct?
 - Has timing analysis completely considered all aspects of timing delay in a 2004 digital system? This includes the timing variation (worse case) that may exist due to process scheduling and the worse case processor clock timing that may exist due to processor drift. This also includes the worse case time delay that may exist in data transfer of penalty factor from the CEAC processor to the CPC processor.
 - Appendix 2 topical mentions 4 algorithms running in a CPC processor, SysRS has five... which is correct?
 - If the CPCS is part of a digital plant protection system, why is the performance of overall time response testing not considered as discussed in APS response to PSAI 6.12
 - FMEA reviewed focuses on field device failures and failures at the card and communication link level, has a software hazards analysis been performed?



Plan/expectation

- Plan for resolving questions identified to date
 - Phone calls with APS personnel
 - System life-cycle activities
 - Procurement spec. requirements
 - Additional RAI's
 - Procurement spec. requirements
 - Requests for further documents
 - Software audit of application specific software of PVNGS CPC - Westinghouse in Windsor, Ct (1st or 3rd week in June)
 - Westinghouse implementation of life-cycle to CPC
 - Focus on 2-4 CPC functions that trace from FSAR/SysRS to actual algorithm.
 - » Function block generation
 - » Software behind custom function blocks
 - » Examples: DNBR, LPD, FSAR timing
 - PVNGS visit to review APS activities (3rd week June or 3rd week July) at PVNGS
 - Procurement Spec conformance
 - APS involvement
 - APS procedure compliance
 - Site acceptance test



- Can these visit time proposals be supported by APS and Westinghouse?
NRC will work with APS to provide agenda items and dates.
- NRC will be available to answer questions and provide further detail as APS needs for additional RAI's and visits or anything else of concern.