

**From:** [Makor, Shiattin](#)  
**To:** [Lorraine.Weaver@aps.com](mailto:Lorraine.Weaver@aps.com)  
**Subject:** RE: RE: Palo Verde - Open Phase Inspection  
**Date:** Tuesday, August 10, 2021 6:42:00 AM  
**Attachments:** [OPC R1 Request for Information\\_PV.docx](#)  
[image001.png](#)

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Hi Lorraine,

Please see the attached RFI for the upcoming inspection. If you have any questions, please feel free to contact me at any time.

Regards,

Shiattin Makor

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**From:** Lorraine.Weaver@aps.com <Lorraine.Weaver@aps.com>  
**Sent:** Friday, August 6, 2021 10:49 AM  
**To:** Makor, Shiattin <Shiattin.Makor@nrc.gov>  
**Cc:** Taylor, Nick <Nick.Taylor@nrc.gov>  
**Subject:** [External\_Sender] RE: Palo Verde - Open Phase Inspection

Good Morning,

I have attached the latest Palo Verde COVID-19 standards and expectations outlining the requirements.

Our inspection is scheduled for the week of September 13. Please let me know if you require additional information.

Thanks,  
Lorraine



**Lorraine Weaver**  
Engineer SR, Compliance  
5801 South Wintersburg Road, Tonopah, AZ 85354-7529, M.S. 7636  
**Office** 623.393.6461 **Cell** 602.448.5915

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**From:** Makor, Shiattin <[Shiattin.Makor@nrc.gov](mailto:Shiattin.Makor@nrc.gov)>  
**Sent:** Friday, August 6, 2021 6:24 AM  
**To:** Weaver, Lorraine M <[Lorraine.Weaver@aps.com](mailto:Lorraine.Weaver@aps.com)>  
**Cc:** Taylor, Nick <[Nick.Taylor@nrc.gov](mailto:Nick.Taylor@nrc.gov)>  
**Subject:** Re: Palo Verde - Open Phase Inspection

**\*\*\*CAUTION\*\*\***

**\*\*\*CAUTION\*\*\***

**\*\*\*CAUTION\*\*\***

This e-mail is from an **EXTERNAL** address ([prvs=845c09f2e=Shiattin.Makor@nrc.gov](mailto:prvs=845c09f2e=Shiattin.Makor@nrc.gov)). **DO NOT** click on links or open attachments unless you trust the sender and know the content is safe. If you suspect this message to be phishing, please report it to the APS Cyber Defense Center at [ACDC@aps.com](mailto:ACDC@aps.com).

Good Morning.

As of now, the inspection is still on-site, but it is a dynamic situation, we are monitoring.

I haven't discussed it with my supervisor yet since it is later in than September. Does Palo Verde have any site guidance that I can review in preparation?

Shiattin Makor

Reactor Inspector

Division of Reactor Safety, Engineering Branch 2

U.S. Nuclear Regulatory Commission, Region IV

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**From:** [Lorraine.Weaver@aps.com](mailto:Lorraine.Weaver@aps.com) <[Lorraine.Weaver@aps.com](mailto:Lorraine.Weaver@aps.com)>

**Sent:** Thursday, August 5, 2021 3:30 PM

**To:** Makor, Shiattin <[Shiattin.Makor@nrc.gov](mailto:Shiattin.Makor@nrc.gov)>

**Subject:** [External\_Sender] Palo Verde - Open Phase Inspection

Shiattin,

I hope you are doing well. I will be facilitating the Open Phase Inspection next month here at Palo Verde.

I am reaching out to ask if the inspection will be remote or on-site. Also, when can we expect the request for information?

Thank you,  
Lorraine



**Lorraine Weaver**

Engineer SR, Compliance

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**TI 2515/194 Revision One**  
**Inspection Documentation Request**

Please provide the following additional documentation (Items 1 – 4) to the inspector prior to the onsite inspection date, preferably no later than September 7, 2021. The information should be provided in electronic format or a secure document management service. Please provide an index of the requested documents which includes a brief description of the document and the numerical heading associated with the request (i.e., where it can be found in the list of documents requested).

Shiattin Makor, Reactor Inspector  
RIV/DRS/Engineering Branch 2  
1600 E. Lamar Blvd.  
Arlington, TX 76011  
817-200-1507  
shiattinmakor@nrc.gov

1. Copies of your licensing basis changes to Updated Final Safety Analysis Report (UFSAR) which discuss the design features and analyses related to the effects of, and protection for, any open phase condition design vulnerability. If these documents have not been updated, provide documentation of your plans to do so.
2. Copies of any site training the inspector will need to accomplish in order to gain access to areas with, or planned, major electrical equipment used in your OPC solution (i.e. switchyard, control room, simulator).
3. Copies of any PRA evaluations for your plant response to an open phase condition. Include Event Trees and Fault Trees developed/used as part of your analysis
4. Copies of any HRA evaluations for your proposed or existing operator actions in procedures used to identify and mitigate open phase conditions. Ensure you include timing information for any operator actions.

Please provide the following documentation to the inspector once onsite. Whenever practical, please provide copies electronically, except for drawings. Drawings should be provided as paper copies of sufficient size (ANSI "C" or "D") such that all details are legible.

5. A brief presentation describing your electric power system design and typical electrical transmission and distribution system alignments; OPC design schemes installed to detect, alarm and actuate (if applicable); bus transfer schemes; and maintenance and surveillance requirements. This presentation should be a general overview of your system. Please schedule the overview shortly after the Entrance meeting.
6. Plant layout and equipment drawings for areas that identify: (a) the physical plant locations of major electrical equipment used in your open phase condition solution and procedures; (b) the locations of detection and indication equipment used in the open phase condition sensing circuits.

7. Summary and discussion about the plant PRA model for an OPC. Include your Human Reliability Analysis (HRA). Please discuss any sensitivity analyses performed, and the results. Also, discuss any assumptions made which bound the sensitivity analysis.

Please set up the follow evolutions/access for the inspector when onsite:

8. Access to locations in which open phase condition equipment is installed (i.e. switchyard, etc.)
9. An operator walkthrough of your OPC response procedures. Include any control room time critical operator actions (use of the simulator may be the preferred method).
10. A discussion of the timeline and consequences of an extended duration unbalanced voltage condition and how it may affect electric equipment, if OPC is not automatically isolated;

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