

**OFFICIAL COORDINATION REQUEST FOR  
NON-ROUTINE OPERATIONS AND MAINTENANCE**

**COORDINATION TITLE-** 15TDA08 transformer delivery/installation

**COORDINATION DATE-** 25 June 2015

**PROJECT-** The Dalles Dam

**RESPONSE DATE-** 13 August 2015 (FPOM)

**Description of the problem** - The Dalles facility has undergone several major projects which including the replacement of a number of the 2 banks main GSU transformers (T-2 and T-4). Due to their age, condition, and likelihood of failure associated with their age, the older single phase GSU and fish unit transformers should be replaced. Priority of replacement shall be given to those most likely to fail soonest, to those with the most noted issues or concerns as shown by maintenance or operational documentation, or to those where a failure would lead to the largest loss of power generation and transmission. The purpose of this project is to replace the single phase 1954-1958 water cooled Ferranti GSU transformers and 1956 Central Transformer Corp. fish unit transformers with new air cooled GSU transformers over a period of several years. Specifically called out for replacement are: TA, T1, T3, T5, T6, T7, T8.

**Type of outage required** – Outage required during installation of each transformer. Each transformer serves two main units. Fish Units may run on TA or T1 while T3 is replaced. Fish Units may run on TA or T3 while T1 is replaced. Fish Units will run on T1 or T3 after TA is removed.

Transformer	Generating Units	Anticipated Schedule
TA	Fish Units	Jul 2019 (removal)
T1	1, 2	Mar - Jun 2018
T3	5, 6	Jul - Oct 2017
T5	9, 10	Nov 2018 - Feb 2019
T6	11, 12	Jul - Oct 2018
T7	13, 14	Nov 2017 -Feb 2018
T8	15, 16	Mar -Jun 2019

**Impact on facility operation** – Each outage is estimated to be 4 months long, during which time those units will not be operating, except for the fish units, which can use either TA or T1.

Units 1 and 2 will be out of service from March – June 2018. Units 3 and 4 will be operated instead.

**Dates of impacts/repairs** – July 2017 through August 2019

**Length of time for repairs** – Each transformer will take about four months. (see 15TDA08 attachment 1 transformer schedule)

**Expected impacts on fish passage** –

Upstream migrants – None. Fish Units may run on TA or T1 while T3 is replaced. Fish Units may run on TA or T3 while T1 is replaced. Fish Units will run on T1 or T3 after TA is removed.

Downstream migrants – ITS chain gates will be adjusted as needed as unit priority is adjusted to accommodate unit outages. Open gates will be moved from Units 1 and 2 to 3 and 4 during the T1 outage.

**Comments from agencies**

**NOAA and TDA (Fredricks and Cordie)**

-----Original Message-----

From: Gary Fredricks - NOAA Federal [<mailto:gary.fredricks@noaa.gov>]  
Sent: Thursday, June 25, 2015 7:52 AM  
To: Mackey, Tammy M NWP  
Cc: Lorz, Tom; Trevor Conder - NOAA Federal; Cordie, Robert P NWP  
Subject: [EXTERNAL] Re: FPOM: Official Coordination - 15TDA08 transformer installation (UNCLASSIFIED)

Tammy, Overall this shouldn't be a fish passage issue although there probably is some risk associated with no backup transformer for the fish units during the highest adult passage months of the year. This concern is compounded somewhat by the fact that all of these transformers are in need of replacement. We should have the emergency AWS system in place by 2017 but as you know, this system is not a full flow replacement for the fish units. Depending on the opinions of the condition of TA and T1, perhaps T7 should be switched in place of T1 to assure redundancy through October.

Also, I noted that the fish unit transformer TA would be removed. Does this mean that there would be no redundancy here if T1 died in the future? Maybe some further discussion is appropriate. Thanks, Gary

On Mon, Jun 29, 2015 at 9:22 AM, Cordie, Robert P NWP <[Robert.P.Cordie@usace.army.mil](mailto:Robert.P.Cordie@usace.army.mil)> wrote:

Classification: UNCLASSIFIED

Caveats: NONE

There will still be redundancy with a bus tie to another transformer bank. It will be through a different line for improved redundancy in case line 1 fails.

More explanation at FPOM.

-----Original Message-----

From: Gary Fredricks - NOAA Federal [<mailto:gary.fredricks@noaa.gov>]  
Sent: Tuesday, June 30, 2015 1:07 PM  
To: Cordie, Robert P NWP  
Subject: Re: [EXTERNAL] Re: FPOM: Official Coordination - 15TDA08 transformer installation (UNCLASSIFIED)

Bob, Is this bus tie a future benefit (after all the transformer work) or something you can do now? In other words, does it affect my concern for the lack of a backup while the work is being done on TA ? Thanks, Gary

-----Original Message-----

From: Cordie, Robert P NWP  
Sent: Tuesday, June 30, 2015 1:27 PM  
To: Gary Fredricks - NOAA Federal

Cc: Mackey, Tammy M NWP  
Subject: RE: [EXTERNAL] Re: FPOM: Official Coordination - 15TDA08 transformer installation (UNCLASSIFIED)

Classification: UNCLASSIFIED  
Caveats: NONE

Gary,

Yes it will be a future benefit and no it's not something we can do before the AWS work starts, because it's a pretty big project.

There are actually 2 projects planned. 1) Fish unit breaker upgrade/replacement (at 10% Plans). 2) powerhouse transformer replacement.

While discussing the best alternatives for the fish unit breaker upgrades, eliminating TA transformers was brought up.

The latest schedule for transformer installs is summer of 2017. Should put us just after the install of AWS backup. This is preliminary and we'll still need to work through unit outages needed for the transformer install.

Future benefit; we do have a bus tie now from TA (fish units) to T1 (main units 1 and 2). Both TA and T1 use line 1, so there is no redundancy for a line failure. New plans will tie to another line, preferable 230KV on the east end for more flexibility.

Lots more to come...

**09 July 2015 FPOM meeting.** 15TDA08 transformer installation. *Pending.* FPOM asked if it would be possible to switch T1 and T7 to reduce the chance of losing the fish units (able to run on TA or T1) during fish passage season. T1 is water cooled and has the most issues right now. The PDT has greatest concern about T1 and is reluctant to delay starting this one. FPOM asked if there is a way to provide redundancy for TA while T1 is out of service, in the event that TA fails before T1 returns. Bettin asked about using the back-up AWS if TA were to fail while T1 is OOS.

**13 August 2015 FPOM meeting.** 15TDA08 transformer installation. *Approved.* T1 and T3 were switched so there would be redundancy for Fish Units. Lorz had suggested switching T1 with T7 but that would result in no redundancy for the Fish Units. Cordie would like the Bus tie is tested before it is turned over to the Project.

**Final results** – This work will proceed as coordinated.

Please email or call with questions or concerns.

Thank you,

Ricardo Walker

PM-E Fisheries

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Tammy Mackey

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