2018 API 2.a.i 1 Joint assignment to OASIS and Business Practices Subcommittees

Paragraphs 1627 of Order 890 – Posting of additional information on OASIS regarding firm transmission curtailments

Individual Assignment: Provide a review of the API 2ai1 Template Structure and report on the information that is available from the IDC and the ECC

**This work paper reflects the above assignment as it relates to the previously developed 2.a.i.1 Template and the Western Interconnect**

2018 API 2ai1 Template Structure

1627. “…These postings must include all circumstances and events contributing to the need for a firm service curtailment, specific services and customers curtailed (including the transmission provider’s own retail loads), and the duration of the curtailment….” (Excerpt from FERC Order 890 para 1627)

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| Required Item | Data Element |
| Identification of the event (Firm curtailment event) | EVENT\_ID (Definition in WEQ-003 will need to be expanded to include local procedures)  [EVENT\_ID is not found in ECC] |
| Reason (Circumstances & events contributing) | FACILITY\_CLASS & FACILITY\_LIMIT\_TYPE & ANNOTATION & PROCEDURE\_NAME & PROCEDURE\_LEVEL  [Annotation not found in ECC – all others found] |
| Services Curtailed (Transmission product & capacity) | [Product and Capacity found in ECC] |
| Customers Curtailed (Entity Code) | [Entity Code on Tag found in ECC] |
| Duration of the event | START\_TIME & STOP\_TIME (curtailment event level & sub level events as appropriate )  [Found in ECC] |

**Enhance Curtailment Calculator (ECC) webIntergrity Calculator**

The Enhance Curtailment Calculator (ECC) uses situational awareness data to determine if Unscheduled Flow (USF) needs mitigation on “Qualified Paths”. Real-time data is assessed utilizing a full interconnection model using the Western Wide System Model and State Estimator primary inputs to the ECC model. System Operating Limits (SOL) are addressed to maintain reliability and post contingency features allow for situational awareness for upcoming hours. Tagged and untagged contributions to path flows are available. Mitigation occurs per the defined methodology taking into account contributors greater than 10% as well as unscheduled versus scheduled, and by Interchange Priorities. Transmission Distribution Factors (TDF) are calculated every five minutes form the real time State Estimator with power flow solutions.

The Western Interconnect Unscheduled Flow Mitigation Plan (WIUFMP) process has four steps: **Step 1:**  The Transmission Operator advises their Reliability Coordinator of the situation and their intended actions. **Step 2:** To the practical extent possible, the Transmission Operator uses their own equipment to reduce unscheduled flows on the Qualified Path. The Qualified Path Operator and their RC shall communicate periodically and as necessary regarding system status, Qualified Controllable Device positioning, the termination of, or taking additional steps in the WIUFMP based on current and anticipated system conditions. **Step 3:** The Transmission Operator requests the coordinated operation of Qualified Controllable Devices to mitigate unscheduled flows on the Qualified Path. This request shall remain active for four (4) consecutive hours unless terminated or advanced to Step 4 by the Transmission Operator of the Qualified Path. To continue beyond the fourth consecutive hour, the Transmission Operator must reissue the request before the completion of the third hour of the event or the event will automatically terminate at the completion of the fourth consecutive hour. **Step 4:** The Transmission Operator requests curtailments in conjunction with the coordinated operation of Qualified Controllable Devices to mitigate unscheduled flows on the Qualified Path. Each hour is deemed to be a separate event for WIUFMP curtailment purposes. Therefore, Transmission Operators must re-issue a curtailment mitigation request for each hour that mitigation is desired. Qualified Path flows must reach 95% of the path limit, or must be anticipated to reach 95% of the path limit before calling on Step 3 or Step 4. Requests for Step 4 must be made by twenty-five minutes after the hour, or sooner as determined by the Administrator, for actions related to the next hour. Curtailment priority is divided into 16 groups based upon the lowest transmission priority used, and whether the curtailment is considered on-path or off-path. Curtailments with a TDF of 10 percent or lower are not used for mitigation.

Information currently available from the Enhanced Curtailment Calculator application used in the Western Interconnect (WI) to implement interchange transaction curtailments, is provided in a number of sections. The following shows the primary sections with key data therein:

1. Path Data (key data)
   1. ECC assignment identifier for a specific event
   2. Common Name/description for specified Qualified Path
   3. RC and TP and Control Area for specified Qualified Path
2. ECC Data (key data)
   1. Issuing RC
   2. NERC report participation (Y/N)
   3. NNL involved (Y/N)
   4. Impact Start time/Date
   5. Impact Stop Time/Date
   6. Initial and Highest impact for the specific event
3. ECC action data
   1. Confirmation time of each mitigation issuance
   2. Current level
   3. Priorities involved
   4. Schedules cut or held with respective levels
   5. NNL relief with Control Areas and amounts
   6. Market relief involved in event
4. ECC Schedule Totals
   1. Priority of involved schedules with tag numbers cut or held and amounts for each
5. Type of transaction involved
   1. Tag
   2. Relief provided over time
6. Pre-Contingency and Post Contingency MW Flow
   1. Transmission Distribution Factor %
7. Next Hour Allocation (key data)
   1. Sink RC
   2. Tag Name
   3. Source and Sink
   4. Tag Priority
   5. Curtailed amount
8. Tag Composite Transmission Stack Detail (per involved tag)
   1. Tag Name
   2. Impact
   3. On or Off Path Tags
   4. Direction
   5. Market Coordination (MO)
   6. Dynamic Schedule (Y/N)

**ECC data Complementary to the proposed 2.a.i.1 Template**

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| **Required Item** | **Data Element Name** | **Data Element Description** | **ECC Data** | **ECC Report Section** |
| **Identification of the event (Firm curtailment event)** | EVENT\_ID | The EVENT\_ID Data Element is any Regional or Interconnection-wide recognized security event identifier for events that are of greater scope than those administered locally by the Transmission Provider assigned in OASIS. | ECC does not use an assignment identifier for a specific event – instead identification is by event date and time for the qualified path | Element Congestion  Display |
| **Reason (Circumstances & events contributing)** | FACILITY\_CLASS | Type of limiting device such as ‘transformer’, ‘line’ | Element common name/description | Element Congestion  Display |
|  | FACILITY\_LIMIT-TYPE | For example: thermal, stability, voltage | Not present – inherent to Element definition |  |
|  | Annotation | Additional notes, comments or other descriptive information with the posted event. | No specific field |  |
|  | ProcedureName | WECC WIUSFM as defined in WECC Policy filed with FERC | ECC USF Active USF procedure and Competing Path and USF Step specific to WIUSFM procedure | Element Congestion  Display |
|  | Procedure\_Level | USF Step associated with actions to be taken to implement WIUSFM  - WECC Policy for the WIUSFM procedure  - Local procedures as registered by Transmission  Providers | Starting and Highest Level from WIUSFM data section | Element Congestion  Display – USF Section |
| **Services Curtailed (Transmission product & capacity)** |  |  | Tags Off-Path and Tags On-Path by Priority | Element Congestion  Event Period Detail |
| **Customers Curtailed (Entity Code)** |  |  | Contained within the e-tag name shown | Element Congestion  Event Period Detail |
| **Duration of the event** |  | START\_TIME & STOP\_TIME (curtailment event level & sub level events as appropriate ) | Start and End time from USFMP data section | Element Congestion  Event Period Detail |