



WEIM Modeling and Resource Registration Forum October 7, 2025

Welcome

Our presentation will begin shortly.

Presenters: *Andrew Brown, Priyanka Namburi, Gina Wansor, Kelsey Ajax
With Guest Presenter from Portland General Electric*

Housekeeping



Keep yourself muted to minimize background noise



Unmute to ask verbal questions or write questions in the chat pod



Raise your hand using WebEx interactivity tools

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State your full name and affiliation before making your comment.



Transparency View list is available to view participants logged into the Webex.



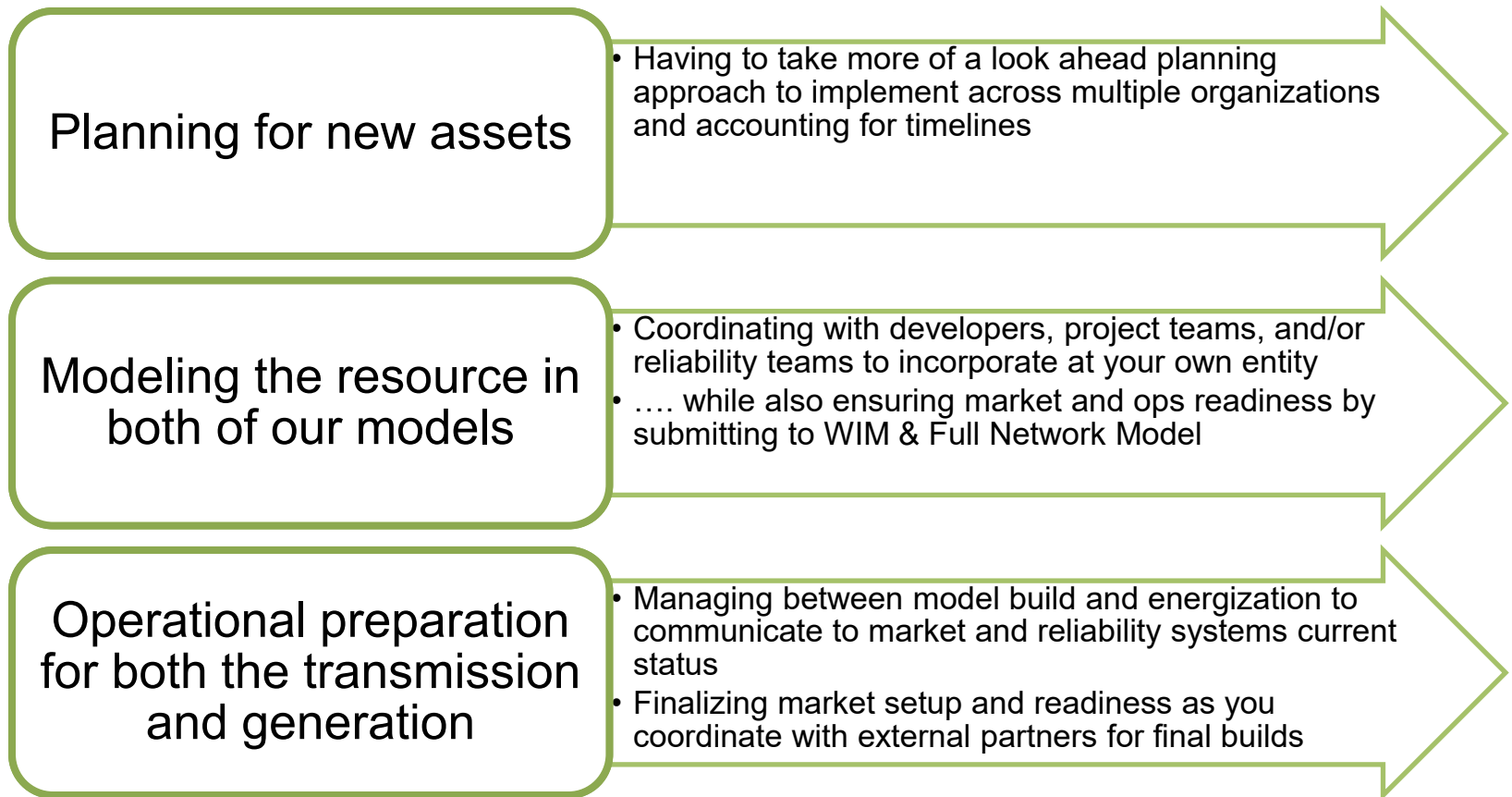
Modeling and Associated Data Exchange Processes

Presenter: Andrew Brown, Operations Coordination Lead

Outline and Planned Topics

- Introduction – modeling in the Full Network Model for RC, WEIM & California ISO
- Where does the model impact (why)
- Modeling Submission Timing
- Required Modeling Submittals
- Following the model
 - Communications & needs on schedules/WebOMS/etc
 - Validation of Production Implementation (Resources)
 - Implementing the generator market readiness

Our (collective) footprints are increasing in size at an accelerated pace, requiring more model management, and coordination



Our team maintains a physical model of the Western Interconnection

- **Western Interconnection Model (WIM)** may be described as...
 - General baseline model topology containing transmission and generation assets within the Western Interconnection
- **Full Network Model**
 - Attributes like generation parameters are added to support the market calculations, power flow studies, real time monitoring, etc



The model and its supporting information is leveraged in different systems for both WEIM and RC West

Real Time Assessment and Management

Tools

- Market (FMM, RTM) - BAAOP
- Real-Time State Estimator, Contingency Analysis - HANA
- EMS

Look Ahead Analysis

- EDAM/DAM (Future)
- Next Day Studies (OPA)
- Operations Planning

WebOMS

- Outages
- Temp Equipment Rating Changes
- Temp modeling between model cycles (holds for double modeling)

BSAP/RC-BSAP, ALFS

- Resource and Load Modeling
- Supports future analyses

Modeling Team & Project Team
Coordination

Real Time
EIM or
RTMOs

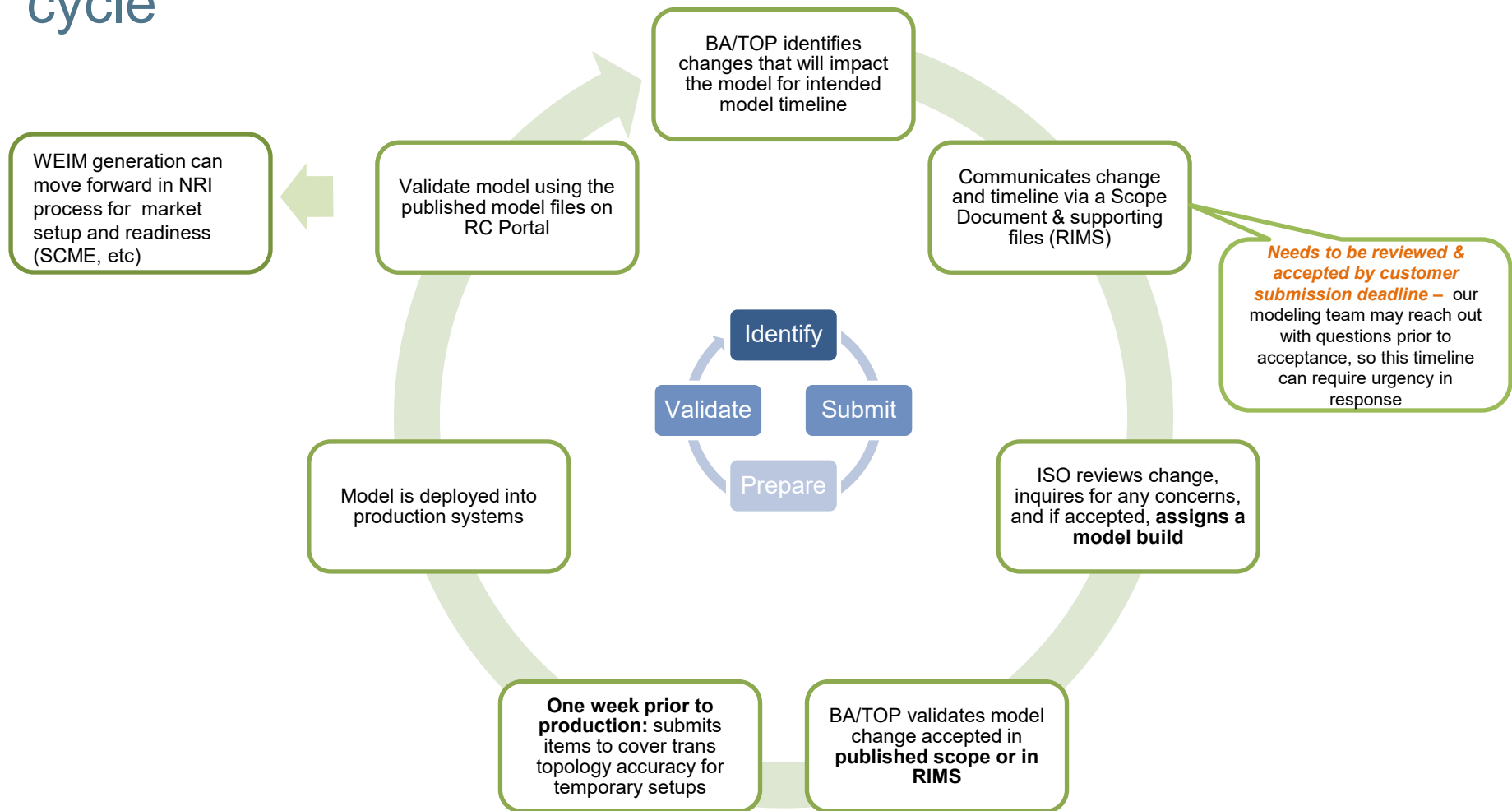
Outage
Coordination

Base
Schedulers
(EESC &
PRSC)

BA
Operators

Model management is critical to the implementation process and requires coordination throughout the organization (and maybe more!)

Model management process is a continuous collaborative cycle



Let's dive a little deeper into some of these topics in the coming slides.

Determining the submission date using the Model Implementation Schedule

FNM Label	Customer Model Document Acceptance Deadline ¹	ISO Publishes Final Scope ²	Late Model Scope Change Request Deadline ³	Production Deployment ^{4 5}
26M2 DBI39	11/19/2025	12/10/2025	12/24/2025	Week of 2/9/2026
26M4 DBI40	1/21/2026	2/11/2026	3/4/2026	Week of 4/13/2026
26M6 DBI41	3/25/2026	4/15/2026	4/29/2026	Week of 6/15/2026
26M8 DBI42	5/20/2026	6/10/2026	7/1/2026	Week of 8/10/2026
26M10 DBI43	7/22/2026	8/12/2026	9/2/2026	Week of 10/12/2026
26M12 DBI44	9/23/2026	10/14/2026	10/28/2026	Week of 12/14/2026

Customer Model Document Submission Deadline

All **completed** model documents must be submitted to be considered in the scope of the corresponding FNM model build

Documents will be reviewed in the order received

ISO Published Final Scope

Final Scope/Work Summary published

After ISO reviews submissions for completeness, addressing concerns with entities, and timelines to build the model, the ISO posts the **final approved scope, which is a summary of changes which will be in the named model**

Late Model Scope Change Request Deadline

Once a model scope has been finalized, a **change request** can be submitted for emergency circumstances for inclusion into the named model. This request requires an executive approval from both parties.

Production Deployment

The week that the ISO/RC West targets to push **implementation into Production. Downstream systems are updated and the model files are published to RC Portal through the following week.**

- Model Schedule can be found on:
- [RC Portal](#) >> Libraries >> Model >> WIM
 - [Westerneim.com](#) >> [Resources](#) >> Integrate with the ISO full network model

Example – identify target production date



- For new equipment, a user should submit an update in advance to ensure model includes new equipment on the targeted *first test energy or in-service date*.
- Example (more project oriented approach):** BA AAA is adding a new generator to their system. The earliest date the equipment will start test energy will be **3/22/2026**.

- Based on the production deployment date, which model build would be best?

26M2

- Completed documentation needs to be **accepted** by what date?

11/19/2025

- ISO publishes Final Scope for which model version and by what date to westerneim.com and [RC Portal](#) for this production deployment?

12/10/2025



FNM Label	Customer Model Document Acceptance Deadline ¹	ISO Publishes Final Scope ²	Late Model Scope Change Request Deadline ³	Production Deployment ^{4,5}
26M2 DB139	11/19/2025	12/10/2025	12/24/2025	Week of 2/9/2026
26M4 DB140	1/21/2026	2/11/2026	3/4/2026	Week of 4/13/2026
26M6 DB141	3/25/2026	4/15/2026	4/29/2026	Week of 6/15/2026
26M8 DB142	5/20/2026	6/10/2026	7/1/2026	Week of 8/10/2026
26M10 DB143	7/22/2026	8/12/2026	9/2/2026	Week of 10/12/2026
26M12 DB144	9/23/2026	10/14/2026	10/28/2026	Week of 12/14/2026



Example – identify target production date



- **Example 2 (Model planning approach):** BA XXX is reviewing projects which will be energized in July of 2026, and anything which will be energized after the week of June 15th, but before the week of August 10, 2026.

- Which production deployment does it need to be in by?

26M6

- Completed documentation needs to be **accepted** by what date?

3/25/2026

- ISO publishes Final Scope for which model version and by what date to westernheim.com and [RC Portal](#) for this production deployment

Which model?

4/15/2026

FNM Label	Customer Model Document Acceptance Deadline ¹	ISO Publishes Final Scope ²	Late Model Scope Change Request Deadline ³	Production Deployment ^{4 5}
26M2 DB139	11/19/2025	12/10/2025	12/24/2025	Week of 2/9/2026
26M4 DB140	1/21/2026	2/11/2026	3/4/2026	Week of 4/13/2026
26M6 DB141	3/25/2026	4/15/2026	4/29/2026	Week of 6/15/2026
26M8 DB142	5/20/2026	6/10/2026	7/1/2026	Week of 8/10/2026
26M10 DB143	7/22/2026	8/12/2026	9/2/2026	Week of 10/12/2026
26M12 DB144	9/23/2026	10/14/2026	10/28/2026	Week of 12/14/2026

Answer: these projects will need to be submitted and accepted by 3/25/2026 to be implemented in 25M6_DB141 during the week of 6/15/2026. If the projects were implemented in the following model build, they wouldn't be in the model until the week of 8/10/2026 and would result in a lack of visibility to the market and reliability tools, and potential delays in resource implementation.



What is a Network Model Scope Document?

- **Think of the Network Model Scope Document as a way to communicate in plain (or operational) language and as a summary of changes being submitted**
 - Communicates what the change is
 - Provides timelines via the intended model build (identified by the FNM label as described in the last section) and when is it going to be energized
 - Leveraged by both the modelers and operations teams to review and implement the changes
 - Description is also used in the Final Published Scope and how you can identify it's been included or communicate to your own WEIM staff on changes submitted
- **It also associates supporting file(s) to the change** in order to identify and update the systems
 - All files uploaded to RIMS should be associated with a Network Scope Document (multiple files can be associated with one scope)
- **Providing the physical equipment level in the project calling out:**
 - Additions or deletions of generators
 - Additions or deletions of equipment 230 kV and above (i.e adding new substation XYZ, and new transmission line XYZ-ABC 230kV line)
 - Equipment Rating Changes, RAS updates, and Contingency Definition Changes additions

Network Model Scope Document Template

- Think of the Network Model Scope Document as a way to communicate in plain (or operational) language and as a summary of changes being submitted
 - Communicates what the change is
 - What the intended model build (identified by the FNM label as described in the last section)
 - Leveraged by both the modelers and operations teams to review and implement the changes
- Providing the physical equipment level in the project – calling out:
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Short Description Specifications	
Equipment Type Dropdown (Column C)	Addition, Update or Removal of an individual one or a Bulk Change?
Transmission Lines	Add X to Y Transmission Line or Update Impedance to A to B Transmission Line.
Shunt Cap\Reactor\SVDs	Add Shunt Cap at X Substation or Update Voltage Deadband PU for all ISO Shunt Caps.
Transformers	Update Rating on X Transformer or Update Step Sizes on all 500 KV Transformers.
Substation\Load	Add new A Substation or Update all Max Voltage at existing 220kV Substations.

Examples

- Provide the physical equipment level in the project – calling out:
 - Additions or deletions of generators
 - Additions or deletions of equipment 230 kV and above (i.e adding new substation XYZ, and new transmission line XYZ-ABC 230kV line)
 - Equipment Rating Changes, RAS updates, and Contingency Definition Changes additions

Requested model change	Example
New Substation for new generator	<p>Added XXX solar generator to XYZ 230kV substation and all that is included in a generator - schedules, synchronous machine, resource controller, associated breaker (012-GEN), and analogs, etc.</p> <p>Tip! In the transmission model file, be sure to use the resource ID which will be in WEIM, to associate the generator to the WIM</p>
Transmission Line Additions/Removals/Updates	<p>New X Sub-Y Sub 230kV line</p> <p>Two new AC line segments were added: ABCDEF230A and MNOP-STUV230A</p> <p>Modeling of new ABC substation replacing XYZ substation (double modeling included)</p>
New RAS	<p>New XXXXX RAS modeling documentation, RAS screenshot and ICCP mapping template for XXX RAS targeted for March 2025</p>

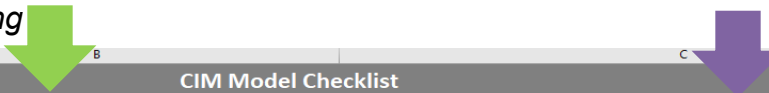
Network Model Scope Template Reminders

- A Network Model Scope Template (available on RIMS) should be submitted with all changes.
- All physical equipment needs to be provided in the project. A new scope item does not need to be created for each element.
 - Any additions or deletions of generation
 - Any additions or deletions of equipment 230 kV and above should be called out.
 - All Equipment Rating, RAS, and Contingency Definition changes, additions or deletions should be called out.
- Effective Date of Change: Date this change is be effective (i.e. 1/1/2020). Also known as In Service Date or energization date.
- Requested Model Build for change to be included in: Model build number intended to be included in (i.e. 2025M2). Identified in the FNM Label.
- Modeling changes should be in a model build prior to their In Service Date.

Use the Modeling Submission Checklist: CIM & WEIM Gen tabs to determine submission

- **CIM Tab**

- *Tab for the WIM modeling*



A	B		C
CIM Model Checklist			
CIM Model Submission	Data requested in Supporting Documentation	Documents required to submit via RIMS UI	
<p style="text-align: center;">CIM Model</p>	<ol style="list-style-type: none"> 1. CIM File 2. ICCP 3. Ratings (If not included in the CIM file) 4. Dynamic Ratings 5. Station Coordinates 6. Line Routing 7. English Name Mapping (If different than the names in the CIM File) 8. GRDT or SGIT update for new resources 9. Contingency Template 10. Dynamic Data 11. RAS Screenshot 	<ol style="list-style-type: none"> 1: Model File 2: ICCP SCADA Template - Full List 3-7: RC Data Gathering Template 6: Shapefile 8: GRDT or SGIT 9: Contingency Definition Template 10: Dynamic Model & dyd Mapping template 11: RAS ICCP Mapping Template & RAS Display Screenshot 	

- **WEIM Tab: New Resources**

- *Tab for market setup and readiness for new PR & NPR*

ICCP Submissions

- **ICCP mapping is on the FNM Timeline:** submit placeholder ICCP names or actual ICCP names with the model submission
 - Placeholder names can be replaced with new names between model builds
- **Breaker & Disconnect/SW status**
 - For both generation and transmission related equipment
- **MW, MVAR**
 - Remember to include parent & child for aggregate or multi stage generators
- Specific Fuel Types may need additional ICCP
 - **Batteries, Hybrids**
 - SOC (resource availability)
 - VER Hybrid would require Met data, HSL, and renewable forecast for any VER resources
 - **Solar, Wind (if requesting an ISO Forecast)**
 - RT Met Data – Appendix Q (typically this is MW)
 - Only for wind or solar standalone resources

Minimum Required ICCP for WEIM Resources

Analogs/Digitals	Point Label	Energy Only	PDR	Solar	Wind	Solar / Wind < 10 MW	Battery	Hybrid Resource
Gross MW	UGMW	✓	✓ 6	✓	✓	✗	✓	✓
Net MW	UNMW	✓ 1	✗	✓ 1	✓ 1	✗	✓ 1	✓ 1
Point of Delivery MW	UPMW	✓	✗	✓	✓	✓	✓	✓
Auxiliary MW	UAMW	✓ 2	✗	✓ 2	✓ 2	✗	✓ 2	✓ 1&3
Wind Speed Meters/Sec	SPD	✗	✗	✓ 7	✓ 7	✓ 7	✗	✓ 7
Wind Direction (Degrees – Zero North 90CW)	DIR	✗	✗	✓ 7	✓ 7	✓ 7	✗	✓ 7
Back Panel Temperature	BPTMP	✗	✗	✓ 3&7	✗	✓ 3&7	✗	✓ 3&7
Plane of Array Irradiance W/Meter Sq	PAIRD	✗	✗	✓ 3&7	✗	✓ 3&7	✗	✓ 3&7
Instantaneous State of Charge	SOC	✗	✗	✗	✗	✗	✓	✓ 4
Max Cont. Energy Limit	MXENERGY	✗	✗	✗	✗	✗	✓	✓ 4
High Sustainability Limit	HSLMW	✗	✗	✓ 5	✓ 5	✓ 5	✗	✓ 5
Unit / Resource Connect	UCON	✓	✗	✓	✓	✓	✓	✓



Notes for WEIM Table

1. If Aux MW are over 1 MW, then Net MW are required.
2. If Aux MW are over 1 MW, then Aux MW is required.
3. See below Solar Meteorological Data Tables from CAISO Tariff Appendix Q. Some data points are not required from solar thermal facilities. This is only required in hybrids with VER components
4. This is required for the hybrid resource if the resource has a Battery component. It is not required if the battery component is non-dispatchable auxiliary equipment used only for startup processes.
5. HSL is required for VER components of Hybrid resources, Co-located VERs and VERs providing AS. It is highly recommended for standalone VERs
6. Resolution is @.001 Gross MW = POD.
7. Meteorological data is only required if the resource will be utilizing a CAISO forecast for the VER.

For Generation, best practices to include:

- Ensuring coordination of the WIM with GRDT (Generator Resource Data Template) and submission of the baseline generation parameters in the model
 - Aligning model ID for generator with Resource ID
 - WIM gen capacity (pmax) should be modeled as its max interconnection/plant capability. The available capacity can be managed by the GRDT & WebOMS. Said differently, GRDT Pmax cannot exceed the model Pmax (will be limited by the model Pmax if it is)
- Coordinate with transmission modeling team to ensure generator POI & related transmission is modeled
 - Including SLDs which includes the substation of the POI to ensure accurate modeling of the connection of the new generator
 - Ensure correct topology, default sw status, and accurate ratings for proper market calculation within CIM file & supporting docs (alignment)

When modeling transmission, best practices include:

- Validating accuracy of submission & post model implementation among:
 - Contingency Definitions for what opens for a contingency (including referencing which is to be made available in market)
 - Facility Ratings (enter ERC cards for incorrect or temp ratings)
 - Default switch positions
 - Including For SW with ICCP (as the default SW may be used for forward looking processes)
 - Check pseudo switches, or double modeling switches
 - *Note: incorrect default SWs can sometimes lead to mistaken disconnection of resources or open transmission → incorrect market result, or RTCA result*
- Providing ICCP list with model build timeline – even if placeholders
 - Can request review for mapping (CIDI)
- Communications of new or major equipment updates (>230kV, RAS, large BES impact) via processes (i.e WebOMS cards, scope document, RT notifications)
- Coordinating transmission modeling as needed for generation (between team who manages RC vs. WEIM)



How can I check if my model submission has been processed?

Reliability Coordinator Dashboard

Reliability Coordinator Documents Uploaded

File that are like network model data and equipment data. RC File Upload

View the status

May see updates or notes in Project column

Correlates to Entity ID when uploading the files

Doc Type	File Name	Status	Assigned Model	Assigned Team	Project ID	Entity	Uploaded Status	User	Uploaded Date
RC Modeling Data	_BusProject_SLD_Ver1.pdf						SUCCESS		03/24/2020
RC Modeling Data	OMS 3.4 Equipment Long Names to RDFID v4.xlsx	Completed	19Q3	EMS			SUCCESS		03/24/2020
RC Modeling Data	RC Data Gathering Template.xlsx	Approved for Modeling	20M7	EMS			SUCCESS		03/23/2020
RC Modeling Data	Network Model Scope Template.xlsx	Reviewed		MCI			SUCCESS		03/23/2020
RC Modeling Data							SUCCESS		03/20/2020
RC Modeling Data	PCB RC Data Gathering Template Ver1.xlsx	Approved for Modeling	20M7	EMS			SUCCESS		03/20/2020

The Project details section can provide more insight once it is approved for a model build.

Project Details

Projects Details

Rows 25

Work Type	Entity	Short Description	Long Description	Resource Name	Target Date	DB Label	DB Model	Project Code	MPAI Comments	Created Date	Created By
NRI	Test1	Test1_Test_HA	Test1 Resource Project	Test1 Resource	12/20/2019		2019M12	19NRI7053		04/19/2019 13:23	RTESTER01X3584

The DB Model will show what FNM the change will be incorporated in

Note: Target Date (effective date) & DB Label is what user submitted for targeted model build, DB Model is the assigned model implementation given. *Future change: name of this dashboard Western Interconnection Model (WIM) Dashboard*

Viewing updates and status in the RIMS dashboard

- **Viewing Status in RIMS**

- Reviewed (Reviewed and passed on for feasibility and approval for implementation)
- **Approved for Modeling (Approved for implementation)**
- **Completed (Implemented into the Production model)**
- **Need more info (RC West requesting more information)**
 - An autogenerated message will be sent to the user associated with the upload
- **Rejected (change rejected or new version submitted)**
 - An autogenerated message will be sent to the user associated with the upload

From: mpai@caiso.com <mpai@caiso.com>
Sent: Wednesday, March 25, 2020 12:24 PM
To: [\[REDACTED\]](#)
Subject: [\[REDACTED\]](#) New RIMS RC Comment/Status Added

This notification is a digest of a recent status change or added comment from RC West in relation to a document uploaded to the Reliability Coordinator Dashboard in RIMS. Please review the comments, upload updated documentation and ensure there is an associated scope item for this requested update.

Entity	File Name	Uploaded Date	User	Status	Project ID
_BA		03/04/2020 02:30:16 AM		Rejected	EMS JSA 3/16/20: We will use the [REDACTED]

One week prior to the model is implemented, activities need to occur if equipment will be changed in the middle of two builds:

- Working with your teams to insert WebOMS cards for:
 - For new generation – TOP can submit OMS card to show resource disconnected from system. After model deployment and once SC Association is complete, SC can submit OMS card to place resource in outage.
 - Double modeling
 - Showing lines out of service which are new lines to be energized later
 - Temporary normal and emergency ratings (i.e. line is getting new rating or reduced rating at later date)

WebOMS Example: New Equipment Energization

Double/dual model example in Appendix

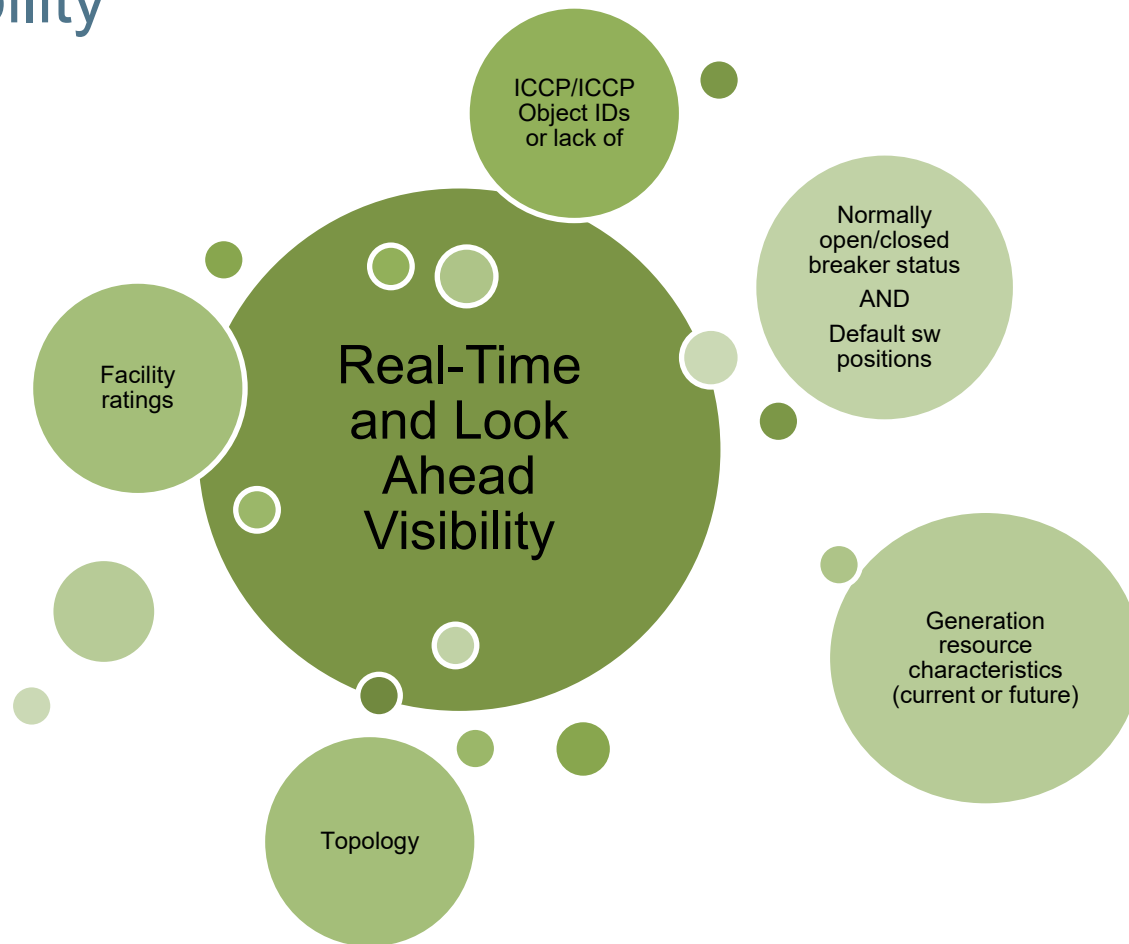
- Project Earliest Implementation Date (Energization): 03/01/2024 08:00
- FNM Production Deployment: 01/22/2024 00:00
- Next FNM Production: 03/25/2024
- RIMS Outage card:
 - Start Date: 01/22/2024 00:00
 - End Date: 03/01/2024 08:00
 - NoW: RIMS_Outage
 - Modeling: Outage card modeling will include switches/breakers open or close depending on the type of status they're needed to be kept in.

Outage start date will be the FNM deployment date at 00:00 and should be submitted to the RC by atleast the day before FNM deployment

The outage modelling should include all the switches which are either opened or closed depending on the nature of work done during emfor the new equipment

few examples of short description of the work.

Inaccuracies in the model could impact our outcomes and visibility



Who at your entity could potentially be impacted? Coordination is key.

Now it's in Production, how do I verify?

For reliability users and entities who are in RC West

RC Portal >> Libraries >> Model

• Western Interconnection Model Library

- Model File (CIM & PSSE)
- Generating Resources
- One lines and model files (by entity)
- Contingency Definitions
- Final Scope (Summary of Changes)
- TCOR Summary
- MVA Ratings

Real-Time ICCP Points Library

- ICCP Data
- Model ICCP Data

The screenshot shows the RC Portal interface. The 'Libraries' menu is open, and the 'Model' option is selected, leading to a sub-menu. In this sub-menu, the 'Western Interconnection Model' option is circled in red. The main page content shows the 'Western Interconnection Model Library' header, a search bar, and a table of documents.

Edit	Name	Title	Entity	Modified on	Alert
	Contingency Definition Active List.xlsx ↓	Contingency Definition Active List	CAISO	12/18/2019	

Snapshot of FNM/DB Upload by RC West

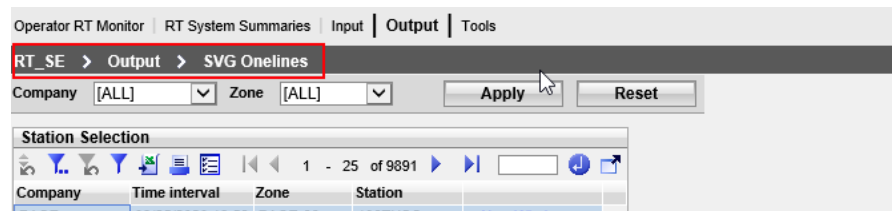
Search by DB model

Export to csv

Edit	Name	Title	Entity
	RC West Work Scope Summary of Changes_FNM 24M8_DB130.xlsx ↓	RC West Work Scope Summary of Changes_FNM 24M8_DB130	CAISO
	RC West One Lines and Model Data Zip_FNM 24M8_DB130.zip ↓	RC West One Lines and Model Data Zip_FNM 24M8_DB130	CAISO
	RC_Resource_08282024.xlsx ↓	RC West and Neighboring Generator Resources FNM 24M8_DB130	CAISO
	DB130 Model MVA Ratings used by Area.xlsx ↓	DB130 Model MVA Ratings used by Area	CAISO
	RC WEST PSSE Model File FNM 24M8_DB130_08282024_1510.raw ↓	RC WEST PSSE Model File FNM 24M8_DB130_08282024_1510	CAISO
	BroadcastBulkNetworkModel_DB130_6534_20240816.zip ↓	BroadcastBulkNetworkModel_DB130_6534_20240816	CAISO
	RC_West_TCOR_Summary_FNM_24M08_DB130.xml ↓	RC_West_TCOR_Summary_FNM_24M08_DB130	CAISO
	RCWest_Active_Contingency_Definition_FNM_24M08_DB130.xml ↓	RCWest_Active_Contingency_Definition_FNM_24M08_DB130	CAISO
	RC_West_CIM_Model_File_FNM_24M8_DB130.zip ↓	RC_West_CIM_Model_File_FNM_24M8_DB130	CAISO

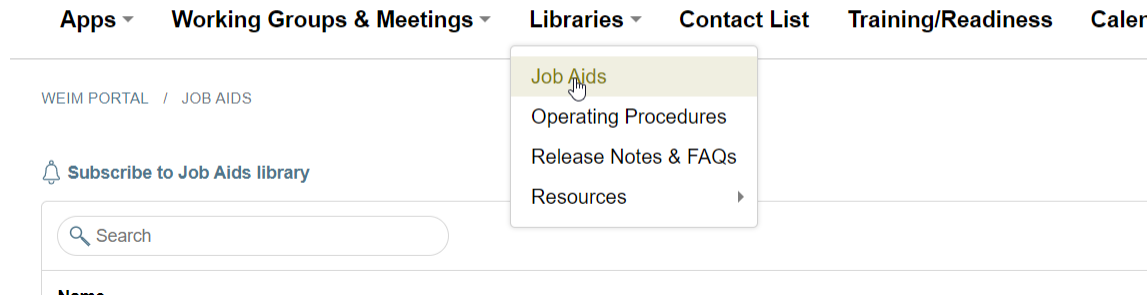
Or, check in the tools

- **All RC/WEIM BA Entity Users: WebOMS** (equipment implemented, naming)
- **All RC Users: HANA** updated default **Facility** Ratings
- **HANA Subscribers only**
 - HANA Subscribers are able to verify topology related changes in Real Time User using HANA SVG Onelines: HANA >> RTSE >> Output >> SVG Onelines)
 - ICCP data that's available in Measurement Station Tabular
- **WEIM BA Entity only:**
 - Market displays can be used to validate transmission modeling
 - Physical modeling can be validated leveraging SVG onelines



For reliability users only, who are in entities privy to the WIDSA

Energization and Test Energy



- For test energy, the market will see it from a line flow perspective which could contribute to congestion, etc.
 - Management of Resource Testing, Job Aid located in the WEIM Portal > Libraries> [Job Aids](#)
 - Notify the RTMO for new large gen or transmission which could significantly change flows
- Things to keep in mind from a model management perspective:
 - Any WebOMS cards for both transmission & gen which may impact effective dating or flow calculations
 - Any ICCP updates should be submitted two weeks prior to energization

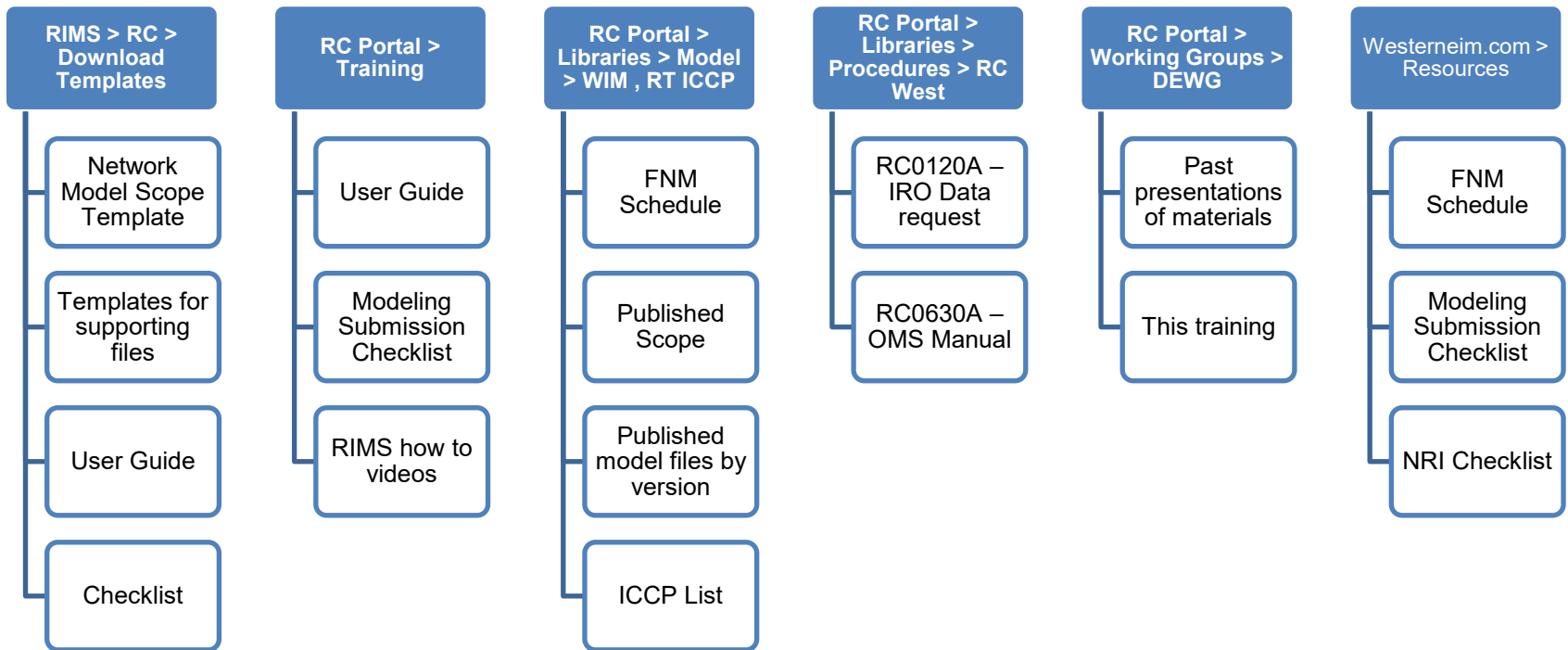


Questions?

WALKTHROUGH ACTIVITIES (TIME PERMITTING)

- WEIM Gen Checklist – Westerneim.com
- Network scope document
- Modeling Submission Checklist
- RC Portal WIM Library

Summary of References



General Communications around Modeling Submission

- Data Exchange Working Group meetings and notifications
- Customer Service Notifications
 - FNM Schedule and Production date updates go to:
 - DEWG members
 - RIMS RC Users (users provisioned with this role)
 - Release notes
 - Application updates
 - Document updates
- RIMS Notifications/Updates
 - **Need for action** sent to user (based on certificate which was used to upload submission)

Follow Up Questions

- **An update was submitted in RIMS for my ICCP links. How do I know if it was implemented?**
 - Please see the previous question to determine approved **status** and **model** for implementation
 - Once that model version is in **production**, review the ICCP files posted which are provided by RC West in the Real Time ICCP folder/library on RC Portal.
 - **Model ICCP** – ICCP provided by entities via ICCP SCADA mapping files
 - **Full ICCP** – Model ICCP + additional ICCPs (HANA, AGC, RAS)

*HANA Subscribers: SVGs & HANA/Measurement Station Tabular may show updates with SCADA measurement for equipment such as Transformers or Line measurements, but won't display ICCP Object ID itself (just current value read). **The best way to validate new points submitted is through the ICCP files provided on RC Portal.***

Follow Up Questions

- **If equipment is being upgraded, i.e. new conductor size and additional transmission capability, what timelines and needs are there?**
 - To review what to submit, use the Modeling Submission Checklist – identify what is impacted by going through the list and then identify which document to submit for that impact
 - Identify target model for implementation and submit files by the deadline associated with that model.
 - In the Network Scope Doc template, provide targeted implementation date of changes (i.e. inservice date)
 - For CIM customers – if double modeling (i.e. with old equipment & new version), provide RIMS outages to ensure accurate modeling and update accordingly as date approaches.
 - For additional questions, please submit a CIDI inquiry

Follow Up Questions

- **What if you have a resource that goes into service say on 3/16/20 but the deployment is week of 3/16 then gets scheduled for release on 3/18/20? Should you plan for the release prior?**
 - Yes, it best to plan earlier to ensure your new resource is showing in the model in time for the effective date, with a webOMS card leaving the resource on “outage” until the release date (in this case 3/16/2020).

Follow Up Questions

- **Are you able to speak to if/when a NRI project is required specifically for new transmission lines? Is it only if it creates a new tie with an adjacent BA?**
 - General note: NRI (New Resource Implementation) Projects are submitted for generation resources for resources which participate in market.
 - For Transmission, follow the transmission process described in this training
 - For RC West entities external to CAISO BA (non-PTOs), this means following the CIM/non-CIM submission checklist and submitting the **required files** into RIMS RC Dashboard as reviewed in this training.
 - For EIM entities, interties may also require SQMD project for submission of tie meters – this is via NRI Project in RIMS.
 - Note that if a Transmission Line changes a **BA boundary**, our team reviews a Complex Project Checklist for requirements. We may also do this for transmission projects between the ISO BA and a neighboring BA.

Follow Up Questions

- **If we are submitting GRDT as part of our EIM submission, do we still need to submit the SGIT?**
 - No the GRDT replaces the SGIT for EIM entities as it has a more expanded dataset for additional use and EIM entities should continue to update the GRDT via the Masterfile/GRDT process.
- **Does the CAISO reconcile Pmax / Pmin between CIM file and GRDT?**
 - Yes, the CAISO will make the changes in the model once it is confirmed with counterparts which values are correct.

Follow Up Questions

- **What if there is no ICCP data for the new projects until it going in to service?**
 - If the point names are available, please provide those.
 - If they are not available, please provide placeholder ICCP names.
 - Please contact your CAISO/RC West representative to have additional discussion.
- **I work for a non-CIM entity, but I'm being asked to review existing model data. How do I do that?**
 - RC Portal > Western Interconnection Model library > One Lines and Model data file



COMPLETE AN SCME PROJECT

Starting an SCME Project

To establish your unique SCME Project Number, you will need to

1. Complete a Project Details Form (PDF) located at: <http://www.caiso.com/Documents/ProjectDetailsForm.docx> and complete the designated fields identified on the form associated with your project.
 - Note: A new SCME Project Number will need to be established to make any modifications to a previously submitted and approved SQMD Plan.
2. Save the completed PDF as a Word document (.docx) and include “New Project” within the filename.
3. Submit your PDF to NRI@CAISO.COM with “New Project” in the email subject line to obtain your unique SCME Project Number.
4. The effective date must be at least 40 days in the future.

Submitting an SQMD Plan

1. Complete all sections of the SQMD Plan Template excluding the “Modification(s)” section.
2. Using the file naming format of: 14SCME1234 SQMD MeterConfig VerX (X = version #)
Utilizing your SCME project number and version number in the file name.
 - a) Additional Meter Devices can be added by completing the SQMD Plan Template Additional Metering Devices Form. Use the following file naming format: 14SCME1234 SQMD Additional MeterConfig VerX (X=Version #)
3. Submit the SQMD Plan Template as a Word document (.docx) via email to NRI@CAISO.COM for processing.
4. Please include the SCME Project Number within the Subject Line to ensure proper processing.
 - a) Example - Subject Line: 14SCME1234 SQMD MeterConfig VerX (X = version #)

SQMD Plan Tutorial and SQMD Plan Template are located on the [Metering and Telemetry webpage of the CAISO website](#).

Submitting a Single Line Drawing

- An SLD with a professional engineering stamp or (equivalent) depicting the physical elements and relationships among the metering device(s) is required to support a SQMD Plan Template.
 - Use the file naming format of: 14SCME1234 SLD VerX (X = version #), utilizing your SCME project number and version number in the file name.
 - Submit the SLD as a PDF document (.pdf) via email to NRI@CAISO.COM for processing.
 - Please include the SCME Project Number within the Subject Line to ensure proper processing.
 - Example - Subject Line: 14SCME1234 SLD

Submitting an SLD Attestation

- SLD Attestation are only required if the SLD is not stamped by a Professional Engineer or equivalent.
 - The CAISO requires Single Line drawings that are either “Issued for construction” or “As-Built”. All the “Issued for Construction” drawings are required to be stamped by a Professional Engineer (PE). In the absence of the Professional Engineer stamp, CAISO accepts an attestation letter. PE Stamp Attestation letter must be from the Electrical Engineer or associated Manager and it should state that the Single Line Drawing is the exact physical and electrical representation of the resource.
- Use the file naming format of: 14SCME1234 Attestation VerX (X = version #), utilizing your CAISO project number and version number in the file name.



COMPLETE MARKET SET UP PROCESS

Pre-requisites for WEIM Resource Market Set Up

Before you start the Market Set Up Process, you must have:

- ✓ Resource Modeled in the FNM build.
 - Model Submission Checklist items submitted and accepted before the Model Build Submission Deadline
 - Model Build Assigned
- ✓ SCME Process Completed
 - SQMD Plan accepted

Let's take a second to review where we are



Schedule and Process Flow Touch-base

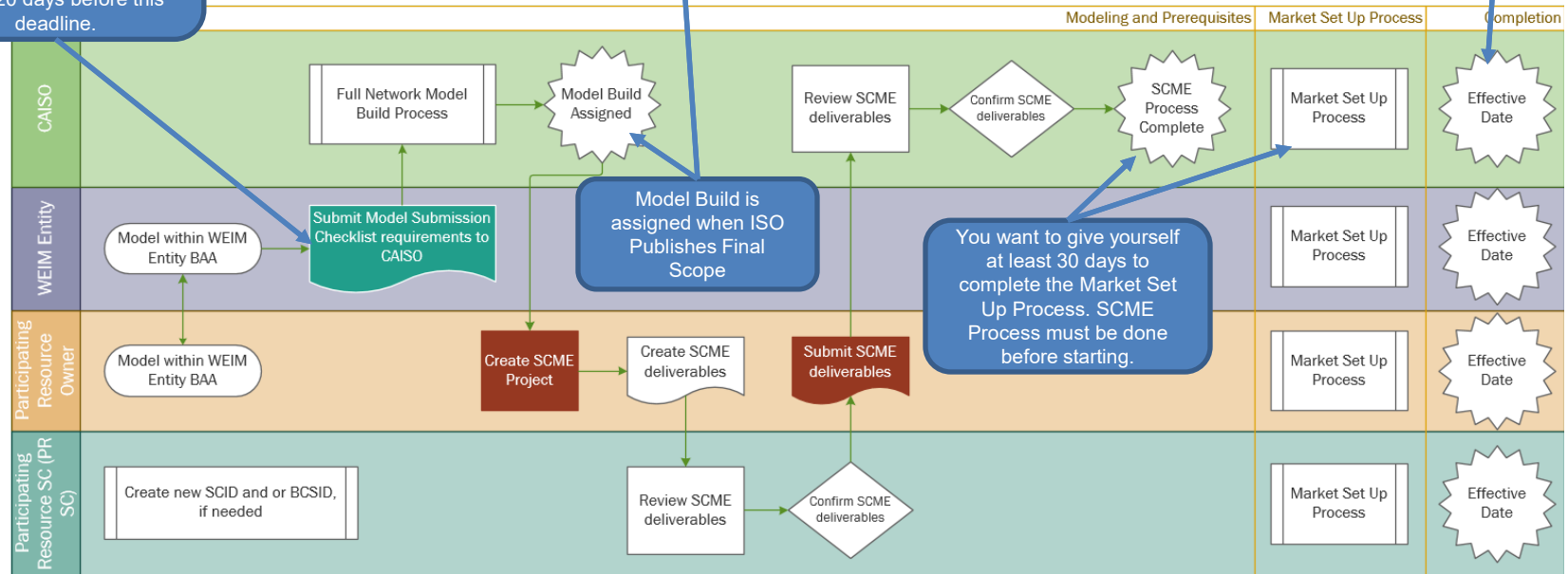
The Model Build you are assigned determines when your earliest Effective Date (Implementation Date) can be. You cannot have an effective date before this date.

FNM Label	Customer Model Document Submission Deadline	ISO Publishes Final Scope	Late Model Scope Change Request Deadline	Production Deployment	Earliest project creation Implementation Date
24M1 DB126	10/18/2023	11/8/2023	11/27/2023	Week of 1/22/2024	2/6/2024
24M3 DB127	12/27/2023	1/17/2024	2/12/2024	Week of 3/18/2024	4/2/2024
24M5 DB128	2/21/2024	3/13/2024	4/8/2024	Week of 5/13/2024	5/28/2024
24M7 DB129	4/17/2024	5/8/2024	5/27/2024	Week of 7/8/2024	7/23/2024
24M8 DB130	6/5/2024	6/26/2024	7/22/2024	Week of 8/26/2024	9/10/2024
24M10 DB131	7/31/2024	8/21/2024	9/16/2024	Week of 10/21/2024	11/5/2024
24M12 DB132	9/25/2024	10/16/2024	11/4/2024	Week of 12/16/2024	12/31/2024

Submission Method Legend

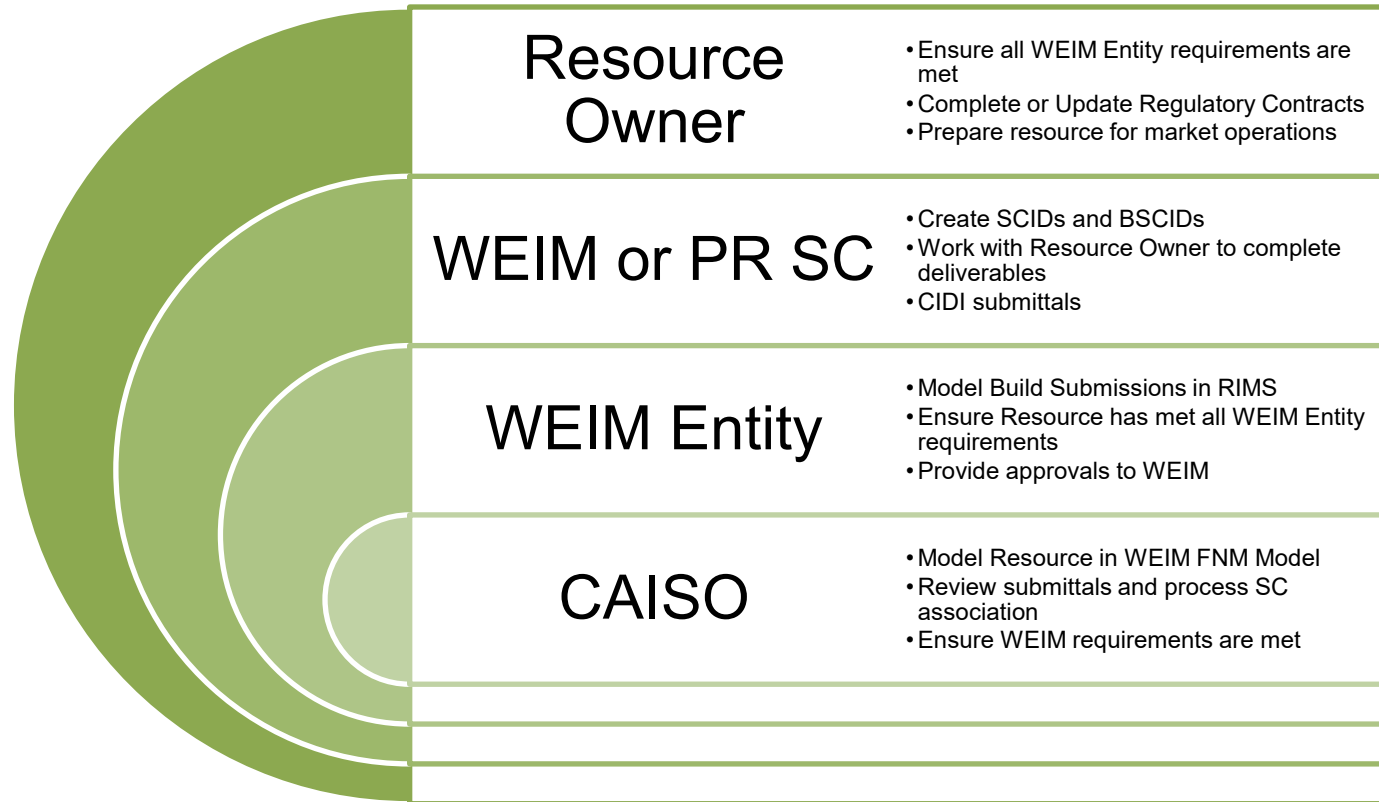
- Email
- CIDI
- RIMS

Model documents should be accepted by the Customer Submission Deadline. You should aim to submit documents at least 20 days before this deadline.



General Roles

The four main roles of the Market Set Up Process and their responsibilities.



Helpful Abbreviations

CAISO Terms

Term	Abbreviation
California Independent Systems Operator	California ISO or CAISO
New Resource Implementation	NRI
Scheduling Coordinator Requests	SC Requests
Scheduling Coordinator ID Code	SCID
Base Schedule ID Code	BSCID
Resource Data Template	RDT
Western Energy Imbalance Market Participating Resource Agreement	EIMPRA

CAISO Applications

Term	Abbreviation
Scheduling Infrastructure and Business Rules	SIBR
Base Schedule Aggregation Portal	BSAP
Automatic Dispatch System	ADS
Outage Management System	OMS
Resource Interconnection Management System	RIMS

Participant Terms

Term	Abbreviation
WEIM Entity	WE
Scheduling Coordinator	SC
WEIM Entity Scheduling Coordinator	WE SC
WEIM Participating Resource	PR
WEIM Non-Participating Resource	NPR

Market Set Up Process Requirement

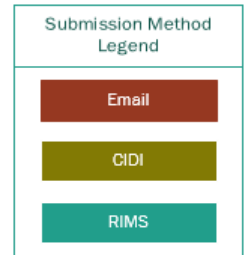
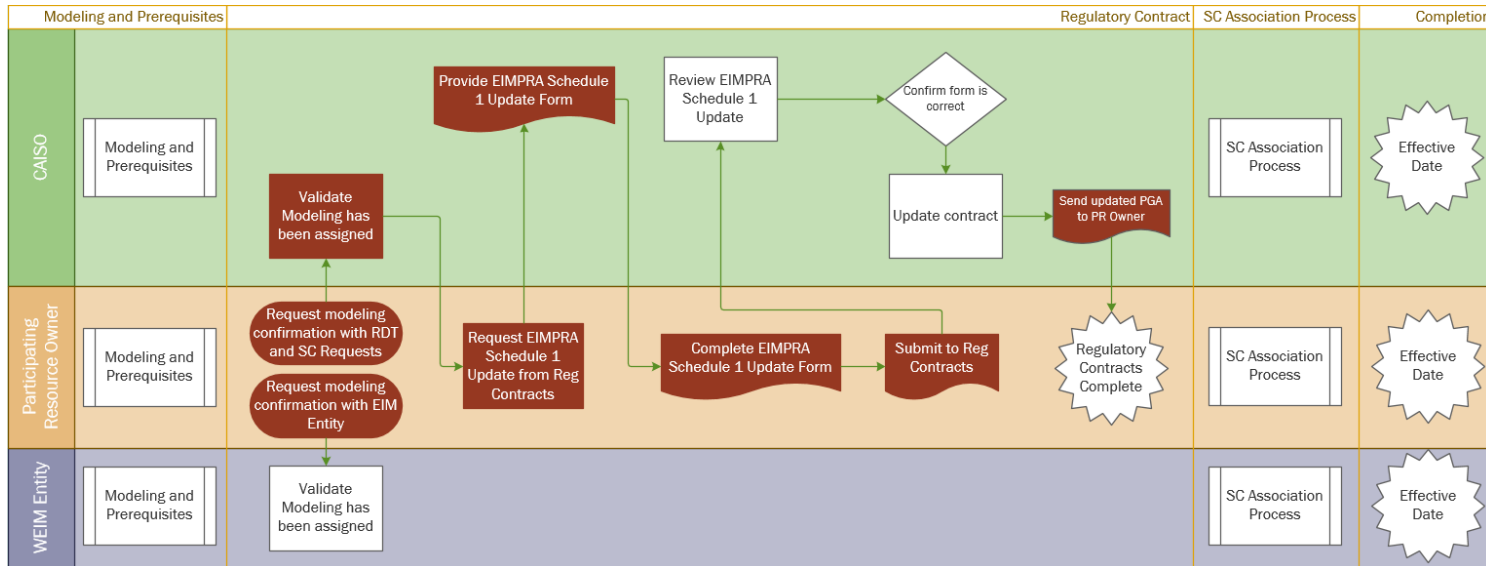
Market Set Up Processes

- SCID/BSCID Creation
- Regulatory Contracts
- WEIM Entity Approvals
- SC Association
 - Market Documents
 - Change Request (CR)
- WEIM Effective Date

Market Set Up Documents

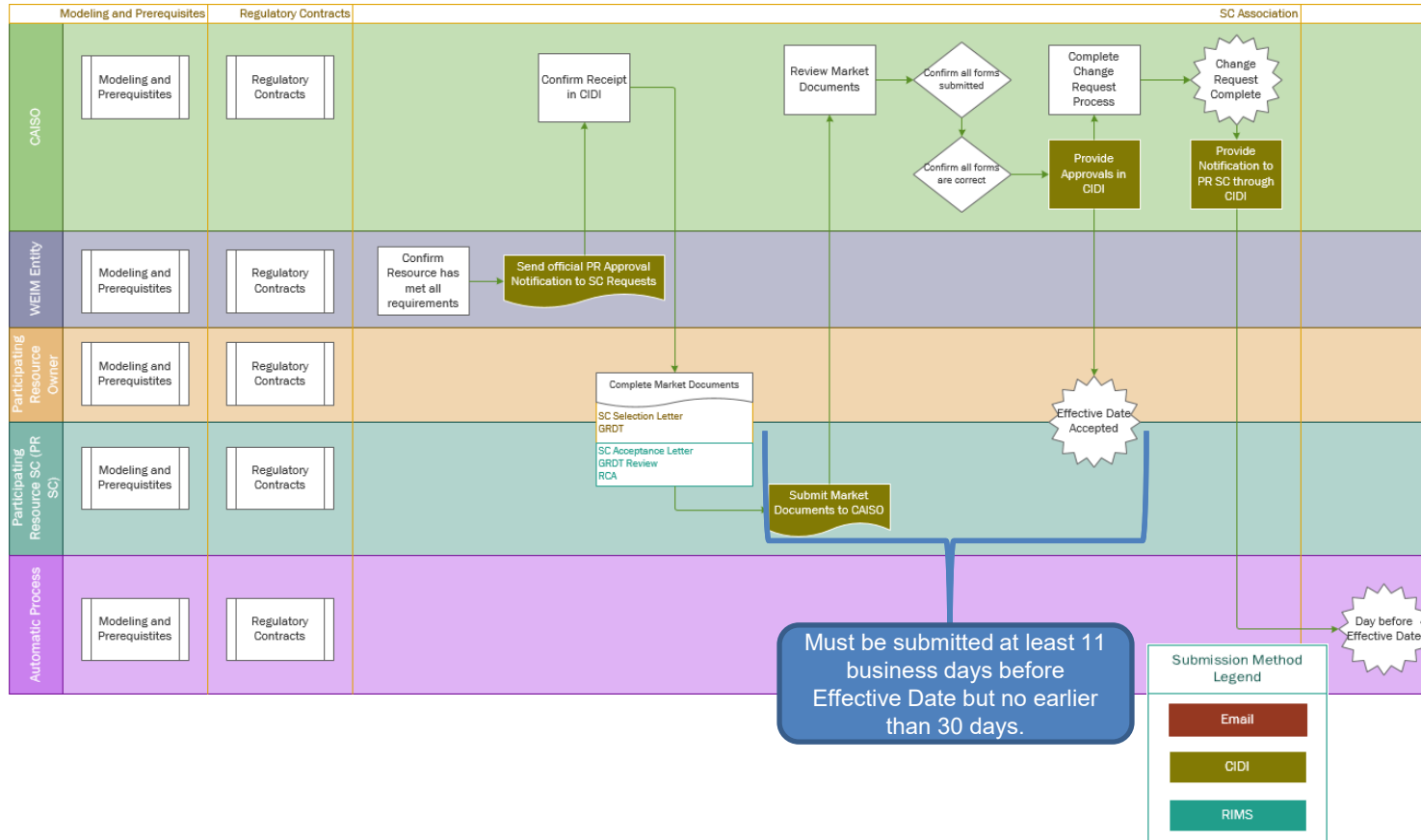
- Approved PR notification from WEIM Entity
- New Scheduling Coordinator Acceptance Letter
- New Scheduling Coordinator Selection Letter
- GRDT
- RCA Disclosure Form
- SCID and, if needed, BSCID
- EIMPRA Schedule 1 Update

Process Flow – Regulatory Contracts



- The Market Set Up Process starts with updating your regulatory contracts.
- PR Owner should confirm with the EIM Entity that all modeling requirements have been met and confirm with RDT and SC Requests that the resource has been modeled.
- Once modeling is confirmed, reach out to Regulatory Contracts to get your contracts updated with the new resource.
- Once your Regulatory Contracts are complete, move on to the SC Association Process.

Process Flow – SC Association



- After completing Regulatory Contracts the WEIM Entity should confirm that the PR has met all requirements. If it has, send official PR Approval Notification through CIDI.
- The rest of the SC Association Process should be coordinated by the SC and CAISO's SC Request group through CIDI.
- The SC will work with the PR Owner to complete Market Documents. Then the SC should submit them.
- SC Requests will review all documents and inform the SC of any deficiencies through CIDI. If there are any deficiencies, SC will need to resubmit.
- Once documents have been accepted, SC Requests will complete the change request process.

Market Set Up Process Differences

This slide highlights the key differences with each type of project

New WEIM PR

Use this process for New WEIM Participating Resources

- The process for New WEIM PRs is outline in the process flows above.
- Submit Regulatory Contracts
- Work with a WEIM Participating Resource SC
- Provide WEIM Entity Final PR Approval

New NPR

Use this process for New Non-Participating Resources

- New NPRs follow a similar process to New WEIM PRs, with a few differences.
- Regulatory Contracts are not required
- NPRs work with a **WEIM Entity** SC instead of a WEIM Participating Resource SC
- WEIM Entity Final Approval not required because the WEIM Entity is the SC

NPR to PR Conversion

Use this process for an Existing Non-Participating Resource converting to a Participating Resource

- Existing NPRs follow the same process as New WEIM PRs with one key difference.
- WEIM Entity SCs must submit an SC Relinquishing Letter alongside the WEIM Participating Resource SC submitting new SC Acceptance and Selection Letters
- Relinquishing Letter transfer date should be minus one day from the effective date



POST EFFECTIVE DATE

Making Changes Post Effective Date

SQMD Plan updates may be needed Post Effective Date. Some reasons a resource may need to update their SQMD plan

- Repower
- Modify meter data interval
- Add generating capacity

Create a *new* SCME project

```
graph TD; A[Create a new SCME project] --> B[Complete and Submit and SQMD Plan and SLD]; B --> C[Project is complete when FNM Email Update shows all needed deliverables as Accepted];
```

Complete and Submit and SQMD Plan and SLD

*The "Modification(s)" section should be completed and capture all changes.

Project is complete when FNM Email Update shows all needed deliverables as "Accepted"

Resource Removal

If a Resource needs to be end dated/removed from WEIM, the following steps are needed depending on

Non-Participating Resource

1. WEIM Entity SC submits an SC Relinquishing letter via CIDI.
2. WEIM Entity removes the resource from the next ISO FNM model.



WEIM Participating Resource

1. WEIM PR SC submits an SC Relinquishing Letter and Resource Owner Letter with SC End Date via CIDI.
2. Participating Resource Owner requests EIMPRA Schedule 1 Update from Regulatory Contracts.
3. CAISO's SC Requests group will process a change request to apply the end date. CIDI notification will be sent out when change request is completed.



UPCOMING CHANGES

Upcoming Changes



New Website

- CAISO's new website launches today!
- Documents and guides should be easier to find but, if you have any issues, please reach out to us via CIDI.

SCME Projects are entering RIMS

- How does this change the process?
 - SCME projects will no longer be created through the NRI Inbox, they will be created through RIMS.
 - Submission of SCME deliverables (SQMD, SLD, etc.) will no longer be done through the NRI inbox, all submissions will be through RIMS.
- How will CAISO support customers through this change?
 - We will be providing a dedicated SCME project RIMS training ahead of the transition.
- When will this change occurring?
 - Fall of 2024

Resources

- [WEIM Procedure for Non-Participating and Participating Resources](#)
- [WEIM Resource Page](#)
- [Full Network Model Schedule](#)
- [Modeling Submission Checklist](#)
- [New Scheduling Coordinator and Resource Owner Reference Guide](#)
- [SC Ongoing Obligations](#)
- [Market Implementation Guide](#)
- Emails for submittals:

Group	Email	Submissions
Regulatory Contracts	RegulatoryContracts@caiso.com	Regulatory Contracts (EIMPRA)
SC Requests	SCRequests@caiso.com	Cc on emails to RDT and Reg Contracts. All submissions should be through CIDI
RDT	RDT@caiso.com	Modeling confirmation
New Resource Implementation	nri@caiso.com	SCME Project Submittals



California ISO



RC West

RIMS Outage Creation for New Equipment and Equipment Upgrade

RIMS Outage Background

- Per RC 630: While energization of new facility and permanent retirement of facility do not require RC's approval, this information and the modeling information should be submitted to RC West Outage Management System so that all other engineering studies, such as outage studies and OPA, can be performed with the correct expected system topology.
- Following scenarios are described in the next few slides:
 - New Energization Equipment
 - Equipment Upgrade: Double Modeling

New Equipment Energization

- Timeline for outage card submission:
 - Project completion expected: 03/01/2024 08:00
 - FNM Production deployment: 01/22/2024 00:00
 - Next FNM Production: 03/25/2024
 - RIMS Outage card:
 - Start Date: 01/22/2024 00:00
 - End Date: 03/01/2024 08:00
 - NoW: RIMS_Outage
 - Modeling: Outage card modeling will include switches/breakers open or close depending on the type of status they're needed to be kept in.

New Equipment Energization

Outage start date will be the FNM deployment date at 00:00 and should be submitted to the RC by atleast the day before FNM deployment

The outage modelling should include all the switches which are either opened or closed depending on the nature of work done during emfor the new equioment

few examples of short description of the work.

Participant Name: CAISO
Outage Class: Transmission
Equipment:

Station	Name	Voltage	Type	ID
---------	------	---------	------	----

Start Date/Time: 01/22/2024 00:00
End Date/Time: 03/01/2024 08:00
Outage Duration: 39 day(s) 8 hour(s) 0 minute(s)
Recurring Outage:
Discovery Date/Time:
Emerg. Return Time/Type: Duration
Nature of Work: RIMS_OUTAGE
BA/TOP Confirmed:
Short Description: *
Opening the new lines from ABC to DEF and from GHI to DEF until DEF is energized
OR
Temporary jumper 123 needs to be closed to correct the topology at 789
OR
Addition of Pink Floyd 345kV substation and transformer to CAISO's model;
It also includes the changes of the California-Vancouver 345kV line to the California-Oregon-Washington-Vancouver 345kV line (3 separate lines)
Equipment Picker: Notes RIMS
RIMS Mission Dates:
RIMS Project ID: 24EMS1934
RIMS Project Phas:
RIMS Project Completion:

Equipment Upgrade- Double Modeling

- Per Modeling user guide for RC customers
 - Post FNM model deployment; Double or Dual Modeling: entities who have double modeled in their model (typically CIM model customers for a “before” and “after” scenario should provide outage management cards to reflect the correct setup for the Operations Planning Analysis.

2. Equipment Upgrade- Double Modeling

- Timeline for outage card submission:
 - Project completion expected: 03/01/2024 08:00
 - FNM Production deployment: 01/22/2024 00:00
 - Next FNM Production: 03/25/2024
 - RIMS Outage card:
 - Start Date: 01/22/2024 00:00
 - End Date: 12/31/2030 23:59 (far future)
 - NoW: RIMS_Outage
 - Modeling:
 - Initially model as-
 - ✓ Before switch close, After switch open
 - Update modeling after project completion as-
 - ✓ Before switch open, After switch close

2. Equipment Upgrade- Double Modeling

Participant Name: PGAE_TOP

Outage Class: Transmission

Equipment:

Station	Name	Voltage	Type	ID
	ABC-DEF 115kV Line			

Start Date/Time: 01/22/2024 00:00

End Date/Time: 12/31/2030 23:59

Outage Duration: 2535 day(s) 23 hour(s) 59 min(s)

Recurring Outage:

Discovery Date/Time:

Emergency:

RAS/SPS Out of Service:

External Notes:

```

24EMS1234: Re-rate the ABC-DEF 115 kV Line
Station Name Type Status
STATION ABC BREAKER A open
STATION ABC BREAKER B close
STATION DEF BREAKER A open
STATION DEF BREAKER B close

24EMS5678: Shoo-fly at DEF
Shoo-fly modeling: (close "after" open "before" to represent shoo-fly in service, or open
"after" close "before" to represent shoo-fly out)
STATION DEF CB 12A Close
STATION DEF CB 12B Open
STATION DEF LOADA Close
STATION DEF LOADB Open
    
```

Annotations:

- The outage card should start when the FNM goes into production; initial end date will be end of 2030 and TOP will later change that date depending on when the double modeling gets cleaned up in RC model
- This modeling should match with what is provided in the external notes section.
- Please include the relevant modeling information in the external notes

Submitting Facility Ratings

- When do Facility Rating updates need to be submitted to RIMS?
 - Update to **default** Facility Ratings in the model (permanent facility ratings), these need to be submitted to RIMS using the RC Data Gathering Template or in CIM file
 - Temporary updates: an entity can submit rating updates by submitting an OMS item containing an **Equipment Rating Change** (view RC0630A - webOMS Manual for instructions)
 - This option would be used in gap times between model versions until the model can be updated or if a rating is only temporarily applicable
 - Example: could use this to manage ratings when a line is being **upgraded** between model builds
 - Example: temporary rating resulting from an outage on a neighboring equipment

Is there anything that needs to be done prior to the model implementation?

- If a rating is being updated, ERC card should be in OMS. Plan to end this OMS item after the rating is updated in Production model
 - Instructions are in OMS Manual on RC Portal
- Double modeling by CIM entities need to put in RIMS Outage cards to ensure model accuracy
 - Submitting a WebOMS item with Nature of Work “RIMS Outage”
 - Default closed transmission equipment (CBs, SWs) which will not yet be in service at the time of the model build should be open in this item until in service date
 - Ensures that the correct status of the equipment is in place for OPA & RTAs

Temporary Ratings in OMS

- Nature of Work: Equipment Derate
- Duration
 - For true temporary ratings, apply the **time duration (start/end date and time)** of the applicable rating – there is a place for Normal & Emergency ratings and any additional comments can be added in the notes.
 - For ratings which need to be communicated while a RIMS update is being processed and implemented into a future model version, should schedule the OMS card to go beyond or up to the applied model implementation date