Use Case – Create Planning Model
CPPS.P01 PlanFutureBaseCases_UC_CreatePlanningModel_V0.4

Name: Create Planning Model

Summary:

Create the Planning Model using the NMMS software and the selected NOMCRs, PMCRs and the Outages as required. SAMRs will also be selected and included in the model package. The output is a RAWD file. The CRR Contingency File and the CRR Settlement File should also be packaged and sent with this model if required. The output is a RAWD file that can be used by the PSS/E software to study the model.

Acronyms:

NMMS	**Network Model Management System**
NMG	**Network Model Group**
NOMCR	**Network Operating Model Change Request**
PMCR	**Planning Model Change Request**
OS	**Outage Scheduler**
PSS/E	**Power System Simulator/ Engineering**
CRR	**Congestion Revenue Rights**
RAWD	**Raw Data, a PTI planning model format**
SAMR	**Special Action Model Request**
TSP	**Transmission System Participant**

Actor(s):

Name	Role description
ERCOT Planner	ERCOT planning staff who create Planning Models to use in other studies and use cases
TSP Planner	TSP Planning staff who create Planning Models to use in studies
ERCOT NMG Staff	ERCOT modeling staff who create planning models for other systems or needs

Participating Systems:

System	Services or information provided
NMMS	ERCOT Network Model Management System, which is the central repository for all NOMCRs, SAMRs, and PMCRs
Outage Scheduler	ERCOT Outage Scheduler system. OS contains a record of all the outages that have been approved by ERCOT. OS can return list of all power system equipment scheduled to be outaged.

Pre-conditions:

- NMMS is up and running
- The EMS contains a copy of the network model maintained in the NMMS

- The NMMS thus contains a record of the system in its current the “as built” condition
- The NMMS contains a copy of all approved NOMCRs
- The NMMS contains a copy of all approved SAMRs
- The NMMS contains a copy of all approved PMCRs
- The NMMS contains a copy of all candidate PMCRS
- The Outage Scheduler is up and running
- The Outage Scheduler contains a copy of all outages scheduled
- The ERCOT or TSP user has logged-on to NMMS and has the authority to work on all data referenced in this use case.

Design Considerations:

- The NMMS is considered a black box. Files inside NMMS only indicate that the request made by the ERCOT or TSP planner cause NMMS to make this data available for use.
- The user must be able to execute the NMMS functions for selection of inputs to the model as well as the functions to build the operational model, convert the model to a bus-branch model, apply all selected inputs and generate a RAWD output file.
- The NMMS must allow the TSP direct access to use the functions described above.

Examples of model changes are:

- The ERCOT planner wants to create a planning mode for a period six months in the future.

Known assumptions, limitations, constraints, or variations that may affect this use case:

- The user must have access to the PSS/E and MOD applications within the NMMS
- The user must have operational and user knowledge of the above tools.

Normal Sequence:

Use Case Step	Description	From - To	Information Content
Step 1	User selects the current Network Operations Model	ERCOT planner, TSP Planner or NMG staff to NMMS system	A copy of the current “as built” network model is made available to the ERCOT planner in a user area of NMMS
Step 2	User (ERCOT planner, TSP planner or NMG staff) selects NOMCRs for inclusion in the planning model. This is accomplished by selecting the date/time of the planning model, or by selecting individual NOMCRs to be included in the model build.	ERCOT planner, TSP planner, or NMG staff to NMMS	Date/Time for which NOMCRs are requested
Sept 3	The NMMS selects all NOMCRs approved for implementation on or before this date. The selected NOMCRs are transferred to a user area reserved for the ERCOT user.	NMMS-NMMS	Information about the selected NOMCRs
Step 4	(Optional) NMMS retrieves list of approved outages	NMMS to	File with list of

	from OS in a formatted XML file.	OS	equipment to be outaged on the selected date is retrieved
Step 5	(Optional) NMMS pre-selects the appropriate outages based on the date given by the ERCOT planner.	NMMS-NMMS	Date/time for which outages are requests
Step 6	(Optional) User further refines the outage list for NMMS.	ERCOT planner, TSP Planner, or NMG staff to NMMS	Pieces of equipment to be outaged are selected.
Step 7	(Optional) NMMS keeps file with the selected scheduled outages in a user area reserved for the ERCOT user.	NMMS to User	File with list of equipment to be outaged on the selected date
Step 8	ERCOT planner selects PMCRs for inclusion in the planning model. This is accomplished by selecting the date/time of the planning model, or by selecting individual PMCRs to be included in the model build.	User to NMMS	Date/Time for which the PMCRs are requested
Step 9	The NMMS transfers all selected PMCRs for implementation. The selected PMCRs are transferred to a user area reserved for the ERCOT user.	NMMS-NMMS	Information about the selected PMCRs
Step 10	ERCOT planner selects the list of RAPs, SPSs, MPs and other associated SAMRs to be included in the model package.		Set of documents that are included in the selected SAMRs
Step 11	User starts process to create a planning model using the Case Builder. NMMS builds the operational model using the base model and the selected NOMCRs, converts the resulting model into a Bus-Branch model, pulls in the selected PMCRs into the planning model and produces a PSS/E RAWD file.	User to NMMS	Instruction to produce model based on data selected in previous steps.
Step 12	User downloads planning model in PSS/E RAWD format. The SAMR files are also downloaded to the user specified destination.	NMMS to User	RAWD file and any SAMR files.
Step 12	Upon completion of download, NMMS releases user area resources.	NMMS to NMMS	

Exceptions / Alternate Sequences:

NONE

Post-conditions:

- PSSE/E RAWD file and SAMR files available to ERCOT.

References:

Use Cases referenced by this use case, or other documentation that clarifies the requirements or activities described.

- COWM.P05.ConductCRRMarket_UC_CreateSettlementFile
- COWM.P05.ConductCRRMarket_UC_CreateContingencyFiles
- COPS.P01ModelManageData_UseCase_ProcessSAMR

The following Standards and documents are referenced by this case:

- IEC 61970-552-4, CIM XML Model Exchange Format Rev6 20050505 Standard
- IEC 61970-501, CIM RDF Schema
- ERCOT Nodal Protocols
- ERCOT NMMS Requirements

Issues:

ID	Description	Status
1.	None	

Revision History:

No	Date	Author	Description
0	08/04/06	J. Waight	Initial draft for internal review
1	08/08/06	J. Moseley	Initial Review
2	08/26/06	M. Goodrich	Added Use Case Formatting, accepted changes, added revisions and clarifications and changed the title to match the naming convention.
3	9/12/06	M. Goodrich	Added edits from NMG