Use Case – Process Contingency Definition Submittal
COPS.P01.ModelManageData_UseCase_ContingencyDefinition_V0.3

Name: Contingency Definition Submittal Process Update

Summary:

Send Contingency Definition to MC in Network Modeling Group (NMG). This file will be maintained in the NMMS database for distribution to the requesting departments. At a minimum, this file wil be sent to the CRR, MMS, and EMS groups in conjunction with the corresponding model. The NMG will maintain a current and future list based on dates that the contingencies will be valid. The correct list, based on the date, will be distributed with the model. The submittal of a Contingency File is a Special Action Modeling Request (SAMR). This Use Case is an addendum to the Process SAMR Use Case.

Acronyms:

MC	ERCOT Model Coordinator
ERCOT	Electric Reliability Council of Texas
NOMCR	Network Operations Model Change Request (AKA: Project Files)
NMMS	Network Model Maintenance System
CIM	Common Information Model
MIS	Market Information System
MP	Market Participant
TSP	Transmission Service Provider

Actor(s):

Name	Role description
ERCOT Model Coordinator (the receiving entity) – Network Modeling Group	NOMCRs containing Contingency Definitions in CIM/XML format or Non-CIM file format are received by the MC and scheduled for future inclusion in the model. Contingency Definitions may also be entered directly in NMMS using the graphic interface after logging into thin client.
MP- TSP (the sending entity)	Send the Contingency Definition NOMCR either in CIM/XML format or Non-CIM format or submit directly by using the graphic interface after logging into the thin client.

Participating Systems:

System	Services or information provided
The EMS and Planning systems or third party tools at the MP.	Identify the Contingency Definitions and send them to MC
The NMMS System at ERCOT	Provide a method to enter the contingency lists, store the dated contingency list and maintain an audit trail for any changes. Include the contingency list in the model distribution package to the appropriate groups.

Pre-conditions:

The MP (TSP) can provide NOMCR – Contingency Definitions to ERCOT using one of the following methods:

1. The MP (TSP) has access to an NMMS Thin Client and enters contingency definitions directly into the ERCOT system.
2. The MP (TSP) can produce a CIM XML Incremental File for submission of contingency definitions to ERCOT over a secure network connection.
3. The MP (TSP) submits the contingency definitions in a Non-CIM file format (ERCOT specified format) over a secure network connection.

ERCOT has an existing power system model and can receive CIM XML Incremental files.

Design Considerations:

- The originator of the Contingency List or modifications to an existing list must use the ERCOT naming convention for all transmission elements and devices.
- Sufficient model data is provided to unequivocally identify the elements involved.

Examples of a typical Contingency Definition:

Index	CTG ID	Description	Station Mnemonic (From)	Station Name (From)	Division (From)	To Station Mnemonic	To Station Name	To Division	Equipment ID	Equipment ID 2	Nominal KV	Equipment Type	CTGS State
1	DALNREN5	ALLEN-RENNER&-P.TENNYSON 345KV	'ALNSW'	ALNSW	TU_E	'PTENN'	PTENN	TU_E	'80_A'	1	345	LN	OUT
1			'ALNSW'	ALNSW	TU_E	'RENSW'	RENSW	TU_E	'95_A'	1	345	LN	OUT
1			'ALNSW'	ALNSW	TU_E	''			'CB_6950'	CB	345	CB	OUT
1			'ALNSW'	ALNSW	TU_E	''			'CB_6070'	CB	345	CB	OUT
1			'PTENN'	PTENN	TU_E	''			'CB_5890'	CB	345	CB	OUT
1			'RENSW'	RENSW	TU_E	''			'CB_5610'	CB	345	CB	OUT

Continued

CNDME	CNDME Threshold	Expected Load Loss	Expected Gen Loss	Activation	Process Type	Congrps
NO		9999	9999	DEFAULT	WIDE	DFW;SFTD;TODF;NH;ALL
NO						
NO						
NO						
NO						
NO						

```
Contingency '1-1-BRAZO-ROANSPRA-IOLA & ROANSPRA-GI'
OPEN LINE FROM BUS 1 TO BUS 4 CKT 1 /* BEPCG ROANSPRA(138)-IOLA(138)
OPEN LINE FROM BUS 1 TO BUS 964 CKT 1 /* BEPCG ROANSPRA(138)-GIBCRK C(138)
OPEN LINE FROM BUS 4 TO BUS 9 CKT 1 /* BEPCG IOLA(138)-BEDIAS(69)
OPEN LINE FROM BUS 9 TO BUS 25 CKT 1 /* BEPCG BEDIAS(69)-NTHZULCH(69)
OPEN LINE FROM BUS 25 TO BUS 47 CKT 1 /* BEPCG NTHZULCH(69)-HLTOPLKS(138)
/* Notes
/* DateStart: No Start Date Specified
/* DateStop: No End Date Specified
/* BRAZOS 10252005
/* Notes
End

<MainConList>
<ConNumber>145</ConNumber>
<ConName>ROANSPRA-IOLA &amp; ROANSPRA-GIBCRK C</ConName>
<ConTag>BRAZO</ConTag>
<DateStart>11110</DateStart>
<DateStop>99990</DateStop>
```

```
<FBNUM1>1</FBNUM1>
<FBNAM1>ROANSPRA</FBNAM1>
<FBVT1>138</FBVT1>
<FBAREA1>2</FBAREA1>
<FBZONE1>2</FBZONE1>
<TBNUM1>4</TBNUM1>
<TBNAM1>IOLA</TBNAM1>
<TBVT1>138</TBVT1>
<TBAREA1>2</TBAREA1>
<TBZONE1>2</TBZONE1>
<CKT1>1</CKT1>
<OWN1>BEPCG</OWN1>
<FBNUM2>1</FBNUM2>
<FBNAM2>ROANSPRA</FBNAM2>
<FBVT2>138</FBVT2>
<FBAREA2>2</FBAREA2>
<FBZONE2>2</FBZONE2>
<TBNUM2>964</TBNUM2>
<TBNAM2>GIBCRK C</TBNAM2>
<TBVT2>138</TBVT2>
<TBAREA2>2</TBAREA2>
<TBZONE2>2</TBZONE2>
<CKT2>1</CKT2>
<OWN2>BEPCG</OWN2>
<Notes>BRAZOS 10252005</Notes>
</MainConList>
```

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

- File format of Contingency Definition: It is still undetermined whether the MPs can submit Contingency Definition in CIM/XML format or they should always use the option of logging into thin client and entering the data directly into the NMMS using the graphic interface.
- Option of logging into the thin client and directly entering always adds the additional issue that a Contingency Definition NOMCR cannot be mixed with a normal NOMCR that requires several levels of validation
- Non-CIM file formats for Contingency Definition may be allowed only if logging into the thin client fails.
- Additionally, any Contingency Definition changes received via NOMCR or other request will be processed immediately and sent to the Production Model for immediate implementation if relevant to the Production Model. Future contingencies will need to be added to the file and the file will be dated to identify which time-based model it corresponds to. When that model is distributed, the time-dated file will be sent with it.
- Currently, the number of tools that will import or export a CIM XML incremental file is limited and there is no CIM XML standard for a Contingency List. It is anticipated that this file will be a non-CIM based file; probably it will be a CSV format defined by ERCOT.
- The MPs currently cannot supply CIM XML incremental files for a contingency list.
- If a CIM format is developed for this file type it will have to be an ERCOT CIM extension.

Normal Sequence:

Use Case Step	Description	From - To	Information Content
Step 1	MP (TSP) prepares a NOMCR containing Contingency Definition information	(from) at MP (TSP)	NOMCR with a Contingency

		(to) MC	Definition file
	The NOMCR is sent to the MC for review, acceptance and processing.		
Step 2	MC receives a NOMCR with a Contingency Definition and a Notification of Receipt is sent to the sending MP (TSP) immediately	(from) MP (TSP) (to) MC and vice versa	NOMCR with a Contingency Definition file
Step 3	MC enters the NOMCR into the NMMS system and schedules it for distribution based on the date that the contingency will be available (i.e., the date the line or device will be in the model).	MC	Contingency Definition NOMCR
Step 4	The MC sends the contingency file to the Model Tester for review and approval of the file contents.	(from) EMC (to) ERCOT Model Tester	Contingency Definition file
Step 5	MC posts the NOMCR to MIS Web site within 5 business days of receipt of NOMCR	(from) MC (to) MIS Web-site	NOMCR containing Contingency Definition file
Step 6	NMMS includes the Contingency List with the corresponding time-based model and distributes the model and file to the appropriate groups.	NMMS system	New Posted Contingency List

Exceptions / Alternate Sequences:

None.

Post-conditions:

Complete and error-free transfer.

References:

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

- COP.P01.ModelManageData_UC_process SAMR_V0.3

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.	There are a few software tools that can generate and accept a CIM XML Incremental file. However, some MPs may need to manually generate the CIM XML incremental input files. Some	

	examples of these files are located on the CIM XML e-group (http://groups.yahoo.com/group/cimxml/). The IEC 61970-552-4 standard provides the requirements should an MP (TSP) wish to create their own tool.	

Revision History:

No	Date	Author	Description
1	8/23/06	J. Moseley	Initial version for Contingency Definitions
2	8/26/06	M. Goodrich	Addressed comments from Curtis Crews and edited the Use Case.
3	9/11/06	M. Goodrich	Added edits from NMG