September 23, 1999

Office of the Secretary
Federal Energy Regulatory Commission
888 First Street, N. E.
Washington, DC 20426

Reference:

1. **Open Access Same-time Information System Final Rule, RM98-3-000; Order No. 605, May 27, 1999**
2. **Open Access Same-time Information System and Standards of Conduct, RM95-9-003, June 18, 1998**

Subjects:

1. **Supporting OASIS Information on Curtailments and Interruptions**
2. **Revised OASIS Standards for OASIS Node Capabilities and Bandwidth**

Dear Mr. Boegers:

The OASIS How Working Group (How WG) and the Market Interface Committee (MIC)1 of the North American Electric Reliability Council (NERC) respectfully offer the enclosed comments in response to the Federal Energy Regulatory Commission OASIS Final Rule, issued May 27, 1999.

1. Commission's Request to the MIC and How WG

The OASIS Final Rule asks the How WG and MIC to respond in two areas:

> (The Commission) requests that the MIC and the How WG prepare a report within three months from the date of publication of this final rule in the Federal Register outlining what additional supporting information about curtailments and interruptions should be posted on the OASIS and available for query. This report should address the scope of the information to support curtailments and interruptions and also include templates for queries of the additional information and for responses containing the information.

1 These comments are the product of extensive discussion between the MIC and the How WG. They have not been reviewed by NERC's other standing committees or its Board of Trustees.

> (The Commission) requests the MIC and the How WG to develop standards for node response time, node capabilities and the bandwidth of the node's connection to the Internet. We further request that the MIC and the How WG report back to the Commission within three months from the date of publication of this final rule in the Federal Register. The standards should explicitly incorporate the concept of requiring nodes to meet the legitimate, ordinary course of business needs of users. The new standards should take into account the industry's experience with OASIS. The MIC and How WG have the option of proposing a redefinition of the existing standards or if appropriate, they can develop a new approach.

2. Executive Summary

In response to the Commission's questions, the MIC and the How WG propose a two-step process for posting of curtailment and interruption information:

1. Initial notification of curtailment or interruption event. Each Transmission Provider shall provide an immediate notification of a curtailment or interruption event affecting scheduled uses of its transmission system. This general event-level notice provides immediate, generic information to the market of actual or impending curtailments or interruptions, to allow market participants to mitigate the commercial impacts to their scheduled uses. Although the responsibility to post the immediate notification rests with the Transmission Provider and the information will be accessible through the Provider's OASIS node, the source of the information will necessarily be determined by the curtailment or interruption procedure being implemented. For example, in the case of a NERC Transmission Loading Relief (TLR) event, the source of the event-level notification will be the NERC TLR web site. In the case of a regional or Transmission Provider specific curtailment or interruption procedure, the source of information will be at the regional or Provider level. In all cases the Transmission Customer will be able to access the information through the Transmission Provider's OASIS node. The Transmission Provider will also provide immediate information regarding curtailment or interruption to each impacted Transmission Customer using the ***security*** template.

2. Detailed auditable transaction data is provided through the ***schedule*** template. This information, for curtailments and interruptions, may be provided immediately only to the PSE that submitted the reservation. Seven days after the end of the curtailment of interruption the information is unmasked and provided to all OASIS users.

For the purpose of these requirements, "immediate" or "immediately" means as soon as possible under normal operating conditions and as soon as practicable under emergency conditions, consistent with previous rulings by the Commission.

The two-step process outlined above requires the following changes to the OASIS posting requirements and the Standards and Communication Protocol (S&CP) document:

1. Each Transmission Provider shall provide a reference to the NERC TLR web site on their OASIS node, if the NERC TLR procedure is applicable to that Provider, or to another common repository source of immediate notification of curtailment or interruption events if other curtailment or interruption procedures are in effect. The NERC TLR web site maintains current and historical information specifically related to application of the TLR procedure. The current information includes the TLR Level, TLR Priority, TLR MW curtailed and the Time of TLR action. It is posted on the NERC TLR web site immediately after a TLR event is declared by IDC. The historical information available from the TLR logs on the NERC TLR web site is described in Appendix B. It is available for a particular TLR event at the conclusion of the event.

2. The ***schedule*** template is to be revised to support the reporting of scheduled uses of the transmission system and any curtailments or interruptions made to those uses or proposed scheduled uses associated with an OASIS reservation. The ***curtail*** template is to be merged with the schedule template. Details of the revised ***schedule*** template are shown in Appendix A.

3. A new template, ***security***, is to be implemented to standardize the Transmission Provider's reporting of transmission security related events and implementation of local, regional, or other procedures used to mitigate those events (see Appendix A).

4. A new template, ***reduction***, is to be implemented to standardize the posting of information that directly impacts the Transmission Customer's rights to schedule transactions against an OASIS transmission reservation (e.g., due to secondary market sales/assignments, a Transmission Provider's imposed "interruptions" for economic reasons, etc.; see Appendix A).

5. Existing OASIS node standards are to be revised for node response time, node capabilities and bandwidth requirements. Details are shown in Appendix C.

Due to a number of related actions being considered by the How WG or already filed with the Commission that require changes to the OASIS S&CP, the MIC and How WG propose to submit a comprehensive revision to the S&CP by December 31, 1999, addressing:

- Changes proposed in this report (re: Docket No. RM98-3-000; Order No. 605),
- Posting of Capacity Benefit Margin (re: Docket No. EL99-46-000; dated July 28, 1999),
- Enhanced audit reporting based on the audit experiment (re: Docket No. RM95-9-003; dated February 10, 1999) as revised to account for new information posting requirements related to the above actions, and
- Miscellaneous clarifications to the standards and templates.

A schedule for implementation of the proposed changes to the S&CP will be included in the filing of the revised S&CP document.

3. Discussion

The issues surrounding curtailment or interruption of transmission service are complex. Much of the complexity occurs because a typical interchange transaction incorporates multiple transmission path segments on multiple transmission providers. While transmission rights are obtained on the basis of the individual path segments reserved on OASIS, curtailments and interruptions typically occur to an entire interchange transaction. Therefore, a single curtailment or interruption event can impact multiple transmission reservations acquired by multiple Transmission Customers from multiple Transmission Providers, with each reservation possible having different start and stop times, durations, and priorities. In addition to the inherent complexity in the construction of a multi-Provider interchange transaction, curtailments and interruptions are often based on security procedures that account for actual flow impacts (e.g., NERC's TLR). For these reasons, it is not practical or effective to view curtailment information only on the basis of an individual transmission reservation. The most effective perspective for viewing curtailment and interruption information combines both a reservation-based view and a view that integrates the information at the interchange transaction level across multiple Providers.

In light of this transaction complexity, the MIC and How WG carefully considered the impact of the Commission's desire for "…disclosure of supporting curtailment and interruption data to…provide useful information for discerning patterns of undue discrimination." The MIC and How WG also considered the Commission's conclusion to seek industry input in identifying the supporting information necessary to address the NOPR's proposal "…that the information under 18 CFR § 37.6(e)(3)(ii) should include information on any other uses of the congested path at the time of the curtailment or interruption."

The current OASIS schedule and curtailment posting templates (***schedule*** and ***curtail***) are specified in the S&CP to represent a **net** MW scheduled or curtailed for a given hour under a given transmission reservation. The net hourly MW information provided by these templates can be useful in assessing the level of utilization of a given reserved capacity, but is wholly inadequate to assess which particular scheduled uses of the transmission system were impacted by implementation of a transmission security curtailment or interruption procedure.

To properly address the Commission's goals to provide public information for discerning patterns of undue discrimination and information on any other uses of the congested path at the time of the curtailment or interruption, the MIC and How WG believe that the level of detail related to the posting of scheduled uses of the transmission system on OASIS must be expanded significantly. The proposed changes to the S&CP ***schedule*** template are discussed further below and are shown in detail in Appendix A.

The MIC recognizes that the detailed schedule and curtailment or interruption information proposed to be posted on OASIS may be commercially sensitive, yet there is also a real need for the market to receive timely notification of events on the transmission system that

may impact their reservations or schedules. The MIC and How WG propose that a new template, ***security***, be added to OASIS specifically for the public announcement of transmission security related events and the application of procedures to mitigate those events. It is intended that Transmission Providers post information using the ***security*** template immediately after implementing such security procedures. Because of its commercial sensitivity, supporting information in the form of the detailed ***schedule*** template information would then be made available to each impacted customer immediately and unmasked to the public seven days after the end of the curtailment or interruption.

In the comments to the NOPR regarding "Additional Information on the Congested Path", several commenters cited the need for information specifically related to the NERC TLR procedures. Implementation of the TLR procedure can potentially impact many interchange transactions across multiple Transmission Providers. While a given Transmission Provider has the knowledge and information of how a specific TLR impacts transactions scheduled through their system, the total number of transactions, MW level of "cuts" requested, etc., are beyond the knowledge of a single Provider or the ability of a Provider to post on OASIS.

Appendix B discusses, in detail, TLR information that is currently posted and additional information that is under discussion for posting on the NERC maintained TLR web site. The MIC and the How WG propose that a navigational link be added to the OASIS node, as soon as possible, of every Transmission Provider that participates in NERC's TLR procedure to direct Customers to the NERC TLR web site. Once the ***security*** template is implemented on OASIS, MIC and How WG recommend that all TLRs that have a potential impact on transmission service within a given Transmission Provider's system would be posted on that Transmission Provider's OASIS using the ***security*** template in addition to being available on the NERC web site. Similar requirements would apply to other regional, interconnection, or Provider curtailment or interruption procedures. Transmission Providers that do not participate in NERC TLR, such as in the Western Interconnection and ERCOT, would not be required to provide a link or information regarding NERC TLR, but would be required to provide similar information regarding curtailment or interruption procedures in effect.

The above discussion has centered on the curtailment or interruption of scheduled or requested transmission service. The MIC and How WG recognize that there are other circumstances where a Transmission Customer's rights to schedule transactions using a confirmed OASIS reservation may be limited in whole or in part over a period of time. Examples of circumstances where a Customer's reserved transmission capacity may be directly limited or reduced include:

- Interruption of lower priority confirmed reservation to accommodate a higher priority request
- Unforeseen forced facility outage impacting transmission capability
- Secondary market sale/assignment of transmission rights
- Deferral of commencement of Firm service

- Offer of partial service (Firm)
- Firm service moved to alternate POR/POD on Firm basis

The first two examples can be viewed as the Transmission Provider's partial recall of a confirmed reservation of capacity. The remaining examples can be viewed as the transfer of reserved capacity for other uses. All of these circumstances impact the Customer's original request for transmission service, but in many cases (with the exception of secondary market sales) there is currently no effective OASIS template mechanism available to document such impacts on the reserved capacity. The MIC and How WG propose the addition of a new template, ***reduction***, as a vehicle to post specific limitations applied directly against a transmission reservation separate from and in addition to the curtailment or interruption information provided in the ***schedule*** template. The circumstances and suggested use of the ***reduction*** template will be more fully developed in the revised S&CP to be submitted in December 1999.

4. Proposed OASIS Template Changes

Appendix A proposes the specific revisions to the ***schedule*** template; merges the ***curtail*** template with this revised ***schedule*** template; defines a new template, ***security***, to address the general need to advise all market participants of transmission security-related events and the application of procedures to mitigate those events; and defines a new template, ***reduction***, for posting of information when a customer's right to schedule transactions against its OASIS reservation is impacted.

4.1 Revised *schedule* Template

The ***schedule*** template revision serves to post information on both scheduled uses of the transmission system and curtailments thereof. To accurately assess whether there is undue discrimination in curtailment of schedules, it is proposed that all schedule information be provided at a level of granularity that those scheduled uses would be impacted by a curtailment procedure. With specific regard to the NERC TLR procedure, this level of information corresponds to the granularity of an interchange transaction or "tag". The MIC and How WG advise the Commission that this template represents a significant increase in the amount and detail of schedule information posted on OASIS.

The major features of this template identify:

- the particular path and/or points of receipt and delivery associated with the interchange transaction (these may not necessarily be identical to the reserved path in cases of network use of non-designated resources, non-firm use of firm service over secondary POR/POD, etc.),
- identification of the ultimate source (generation) and sink (load), if known,
- the MW amount requested to flow and actually scheduled,
- reference to the associated transmission reservation(s) supporting this schedule along with some specific information from the reservation(s), and

- if the MW amounts requested and scheduled are not equal due to curtailment, reference to the specific procedure invoked (also posted on the ***security*** template), the MW cap being applied to the transaction by the responsible party (lower than the requested amount, but potentially higher than the scheduled amount if the scheduling party makes other arrangements to service all or a portion of the impacted load), and specific information related to the application of the curtailment procedure.

In addition to the requirement to post information on the curtailment of existing schedules, it is expected that the Transmission Provider will also post any refusal or denial of a request to schedule an interchange transaction due to the application of a security procedure that would limit such a request (e.g., the "holding" provision of NERC's TLR level 2). Absent this information, assessment of discrimination would be difficult. The general requirements of 18 CFR 37.6 (a)(4) support this aspect of the proposal.

In accordance with 18 CFR 37.6(f), posting of detailed schedule information on OASIS shall be "…no later than seven calendar days from the start of the transmission service." The MIC recognizes that information contained in the new ***schedule*** template is commercially sensitive, but must necessarily be disclosed at some point in time in order to provide after-the-fact audit type information for assessment of comparability. The MIC recommends, consistent with existing FERC policy, that the detailed, transaction level schedule information posted on OASIS via the ***schedule*** template be disclosed to the public no sooner than seven calendar days from the start of the transmission service. Further, MIC recommends that detailed curtailment or interruption information posted on OASIS via the ***schedule*** template be unmasked on the seventh calendar day after the **end** of the curtailment. The curtailment or interruption detailed information would be available to each impacted Customer immediately.

4.2 New *security* Template

The ***security*** template is intended to standardize the posting of information related to the implementation of local, regional or NERC procedures that may impact scheduled uses of the transmission system. The major features of this template identify:

- the party calling for implementation of the procedure (e.g., a Control Area operator),
- the party responsible for actually implementing the procedure (e.g., a NERC Security Coordinator),
- the name of the particular procedure and level (if applicable) within that procedure (e.g., TLR Level 3),
- the identification of the particular system element causing the implementation of the procedure, and
- the time frame over which this particular event is in effect.

With respect to the posting of information on implementation of transmission security procedures, it is anticipated that Transmission Providers would be required to provide this specific information either by direct posting on their OASIS node, or by reference to a

common repository for this information (e.g., the NERC TLR web site). However, any indirect reference to a common repository must be made totally transparent to the requesting party by the Transmission Provider's OASIS node, and be capable of being provided to the requesting party via the ***security*** template.

Consistent with prior FERC rulings, Transmission Providers should be required to post information on implementation of transmission security procedures as soon as possible under normal conditions and as soon as practical under emergency conditions. Any delay in posting should be explained by the Provider.

The How WG also envisions the ***security*** template to be used to provide a formal mechanism for the posting of transmission facility outages. This information is currently posted to OASIS in an ad hoc fashion based on the prevailing practices of each individual Transmission Provider.

4.3 New *reduction* Template

A new template, ***reduction***, is proposed for the posting of information regarding the direct limitation of a Transmission Customer's rights to schedule interchange transactions against a reservation as opposed to the curtailment or interruption of an existing schedule under that reservation. An obvious case is in the Transmission Customer's voluntary sale or assignment of rights to all or a portion of the reserved capacity on the secondary transmission market. Such sales directly reduce the original customer's rights to schedule usage of those reserved MWs assigned to a third party.

Interruption of a transmission reservation for economic reasons may also fit under this type of reduction to the original reservation where such a limitation is imposed regardless of any proposed scheduled use of that reservation. A specific example might be the reduction of a single day of a non-firm weekly reservation to accommodate a daily firm request. The pro-forma tariff indicates that exercising such an interruption is at the discretion of the Transmission Provider. The ***reduction*** template would be used to document the circumstances, MW amount, and time frame over which the reduction of the originally reserved MW capacity is imposed.

The documentation of a granted request to move a confirmed firm point-to-point transmission service reservation to an alternate point of receipt and/or delivery on a firm basis (Pro-Forma section 22.2) may also be a case for the use of the ***reduction*** template. Per the Pro-Forma Tariff, such requests are to be treated as a new request. In this case, the entire original reserved MW capacity from the effective start time of the transmission customer's request to move to the alternate POR/POD through the end of the original reservation period would be reduced to 0 MW, and the granted use of the alternate POR and/or POD would be reflected in a new confirmed reservation request covering the MWs for the balance of the original reservation period.

The How WG and MIC need further time to consider all the potential applications of the ***reduction*** template, and may elect to extend and refine the associated data elements, or abandon this template altogether in the final S&CP filing if the necessary information can be provided through modification of existing templates.

5. NERC TLR Web Site Information

Additional supporting information regarding curtailments and interruptions called out in comments to the NOPR are beyond the scope of information applicable to any one specific transmission provider and should be provided as soon as possible to all parties. Information such as the total MW relief requested for a given NERC TLR event, flowgates impacted, etc., are best provided to all market participants through a common repository of information. For Transmission Provider's using the NERC TLR procedure, the Provider's general information page (INFO.HTM) shall contain a hypertext link to a common repository (e.g., NERC TLR web site) where such interconnection-wide historical information would be accessible. Appendix B describes the scope of information related to curtailments that will be accessible from the NERC TLR web site.

6. OASIS Node Performance

Finally, Appendix C outlines a proposed change to the OASIS node performance and bandwidth requirements that will be incorporated into the revised S&CP. These metrics provide a more reasonable and auditable assessment of each node's ability to meet minimum performance standards to serve the "…legitimate ordinary course of business needs."

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Appendix A
Revisions to OASIS S&CP: Schedules and Curtailments

The following sections outline the changes proposed to the existing OASIS Phase 1A ***schedule*** and ***curtail*** template to meet the posting requirements of FERC's Final Rule on posting of curtailment and interruption information.

The ***schedule*** template has been expanded to represent individual scheduled uses of the transmission system at the interchange transaction level, rather than providing a "net" hourly MW value on a per OASIS reservation basis. For those Transmission Providers requiring the tagging of transactions, it is expected that this schedule information will be posted on a tag-by-tag basis.

The ***curtail*** template is merged with the ***schedule*** template such that any curtailment, interruption or denial of a scheduled interchange transaction would be posted and directly associated with the transaction impacted.

A new template, ***security***, is proposed to standardize the posting of 1) facility outages (currently a TP voluntary practice), and 2) invocation of any security procedures (e.g., TLR, or other regional/local procedure) that may limit or reduce scheduled transactions. Information posted using the ***security*** template may be furnished by an external site (e.g., NERC Interchange Distribution Calculator (IDC) or other NERC web site).

4.3.4 Query/Response of Schedules and Curtailments

4.3.4.1 Transaction Schedule (schedule)

Transaction Schedule (***schedule***) provides information on the scheduled uses of the Provider's transmission system. Posting of transmission service schedule information shall be in accordance with regulatory requirements, and reflect scheduled uses of reserved capacity to a level of detail that such schedules are subject to a Provider's application of transmission security procedures and policies regarding curtailment and interruptions. There is no restriction on the number of transaction schedule records that may refer to a given transmission reservation at a given point in time.

The query variables ASSIGNMENT_REF, SELLER_CODE, SELLER_DUNS, CUSTOMER_CODE, CUSTOMER_DUNS, SERVICE_INCREMENT, TS_CLASS, TS_TYPE, and TS_PERIOD act to select those transmission reservations for which all applicable transaction schedule information is to be returned. The PATH_NAME, POINT_OF_RECEIPT, POINT_OF_DELIVERY query variables select all applicable interchange transaction schedule records that use the specified path, point of receipt, and/or point of delivery. The TIME_OF_LAST_UPDATE, START_TIME, and STOP_TIME

query variables select those particular interchange transaction schedule records updated and/or effective: 1) on or after a particular point in time (START_TIME alone), 2) before a particular point in time (STOP_TIME alone), or 3) between particular points in time (START_TIME and STOP_TIME). The SCHEDULE_REF query variable selects all applicable schedule information records associated with that particular schedule. Note that the format of SCHEDULE_REF may be Transmission Provider specific.

Each ***schedule*** template record returned in response to a query shall include information associated with:

1. information specifically related to the scheduled transaction,
2. information from all applicable OASIS transmission reservations used to support the scheduled interchange transaction, and
3. information related to any curtailment or interruption of service (if applicable), including a Transmission Provider's refusal to accept or begin a Customer's proposed interchange transaction for reliability or economic reasons (as allowed by the Provider's Tariff).

Information to be supplied in each ***schedule*** template's response records related to the scheduled interchange are, SCHEDULE_REF, PATH_NAME, POINT_OF_RECEIPT, POINT_OF_DELIVERY, GCA_CODE, LCA_CODE, SOURCE, SINK, SCHEDULE_PRIORITY, START_TIME, STOP_TIME, CAPACITY_REQUESTED, and CAPACITY_SCHEDULED.

Consistent with FERC policy, schedule information is posted 7 days after the transaction starts. Schedule information may be provided before 7 days, but shall be accessible only to the Transmission Customer who made the original OASIS information, since it contains market sensitive information. Curtailment information is provided as soon as the Transmission Provider has the information, but is accessible for the first 7 days only to the Transmission Customer who made the original OASIS reservation, since it may contain market sensitive information.

SCHEDULE_REF uniquely identifies the particular transaction schedule. When available, this data element should reflect any industry-recognized transaction identifier rather than a Provider specific internal identifier (e.g., the NERC electronic tagging "tag-id"). PATH_NAME, POINT_OF_RECEIPT, and POINT_OF_DELIVERY identify the Transmission Provider's specific transmission resources used by the scheduled transaction, and would typically be identical to the corresponding data elements associated with the OASIS transmission reservation used to support the schedule. When known, the GCA_CODE and LCA_CODE identify the NERC registered Control Area acronyms associated with the ultimate generation and load control areas respectively. When known or required to more specifically identify the ultimate points of generation and load, the SOURCE and SINK elements identify service points within the generation and load Control Areas respectively. SCHEDULE_PRIORITY identifies the relative priority of this particular interchange transaction as compared to all other scheduled transactions with respect to the application of curtailments or interruptions. SCHEDULE_PRIORITY would

typically reflect the curtailment priority data elements associated with the OASIS transmission reservation used to support the schedule (i.e., NERC_CURTAILMENT_PRIORITY or OTHER_CURTAILMENT_PRIORITY). START_TIME and STOP_TIME designate the particular time interval represented by this record associated with the scheduled transaction. Note that multiple response records may be returned for a given schedule when information associated with the schedule vary over time (e.g., CAPACITY_REQUESTED, CAPACITY_SCHEDULED, CAPACITY_LIMIT, etc.), but that ***schedule*** template response records for a given schedule should never overlap in time. CAPACITY_REQUESTED reflects the MW value requested to be scheduled by the Customer during the hour, and CAPACITY_SCHEDULED reflects the MW value actually scheduled by the Transmission Provider at either the point of receipt or delivery, whichever is larger, over the START_TIME/STOP_TIME time interval. When CAPACITY_REQUESTED exceeds CAPACITY_SCHEDULED, a curtailment or interruption is in effect and additional information shall be returned in the record.

Information in each ***schedule*** template's response record related to the OASIS transmission reservation(s) supporting the scheduled transaction includes ASSIGNMENT_REF, SELLER_CODE, SELLER_DUNS, CUSTOMER_CODE, CUSTOMER_DUNS, AFFILIATE_FLAG, SERVICE_INCREMENT, TS_CLASS, TS_TYPE, TS_PERIOD, TS_WINDOW, TS_SUBCLASS, NERC_CURTAILMENT_PRIORITY, OTHER_CURTAILMENT_PRIORITY, and CAPACITY_USED. Transaction schedules that are supported by the use of multiple OASIS transmission reservations return the information attributable to each individual transmission reservation using continuation records (i.e., records beginning with CONTINUATION_FLAG = 'Y'). Each continuation record shall also include the SCHEDULE_REF identifier from the first (CONTINUATION_FLAG = 'N') record. CAPACITY_USED reflects the peak MW amount of the reservation used to support the scheduled transaction; the sum of CAPACITY_USED over all continuation records (if applicable) should equal the CAPACITY_SCHEDULED.

Transaction schedules that were either "denied or interrupted" (ref. 18 CFR 37.6(a)(4)) shall include information in the ***schedule*** template's response related to the reason the transaction could not be started or continued at the requested MW amount. The information returned shall include: PROVIDER_ACTION, CAPACITY_LIMIT, CURTAILMENT_OPTIONS, SECURITY_REF, INITIATING_PARTY, RESPONSIBLE_PARTY, PROCEDURE_NAME, PROCEDURE_LEVEL, FACILITY_LOCATION, FACILITY_NAME, FACILITY_CLASS, and FACILITY_LIMIT_TYPE. If there are no restrictions to the scheduled transaction, these data elements shall all be returned as null.

PROVIDER_ACTION indicates the particular action taken by the Transmission Provider with respect to the scheduled transaction; specific values to be returned are, DENIED if the schedule was not started as requested, CURTAILED if the scheduled MW was limited for reliability reasons, or INTERRUPTED if the scheduled MW was limited for economic reasons. CAPACITY_LIMIT reflects the **maximum** MW value over the

START_TIME/STOP_TIME interval that the Provider has determined can be scheduled. CURTAILMENT_OPTIONS defines any options the Customer may exercise to reinstate all or part of the proposed schedule. SECURITY_REF, INITIATING_PARTY, RESPONSIBLE_PARTY, PROCEDURE_NAME, PROCEDURE_LEVEL, FACILITY_NAME, FACILITY_CLASS, and FACILITY_LIMIT_TYPE provide information related to the specific transmission security event that prompted the Transmission Provider's denial, curtailment or interruption of the proposed scheduled transaction (see ***security*** template).

Template: ***schedule***

1. **Query**

PATH_NAME*
SELLER_CODE*
SELLER_DUNS*
CUSTOMER_CODE*
CUSTOMER_DUNS*
POINT_OF_RECEIPT*
POINT_OF_DELIVERY*
SERVICE_INCREMENT*
TS_CLASS*
TS_TYPE*
TS_PERIOD*
START_TIME
STOP_TIME
TIME_OF_LAST_UPDATE
ASSIGNMENT_REF
SCHEDULE_REF

2. **Response**

CONTINUATION_FLAG
TIME_OF_LAST_UPDATE
SCHEDULE_REF
    PATH_NAME
    POINT_OF_RECEIPT
    POINT_OF_DELIVERY
    GCA_CODE
    LCA_CODE
    SOURCE
    SINK
    SCHEDULE_PRIORITY

START_TIME

STOP_TIME
CAPACITY_REQUESTED
CAPACITY_SCHEDULED

ASSIGNMENT_REF
- SELLER_CODE
- SELLER_DUNS
- CUSTOMER_CODE
- CUSTOMER_DUNS
- AFFILIATE_FLAG
- SERVICE_INCREMENT
- TS_CLASS
- TS_TYPE
- TS_PERIOD
- TS_WINDOW
- TS_SUBCLASS
- NERC_CURTAILMENT_PRIORITY
- OTHER_CURTAILMENT_PRIORITY
- CAPACITY_USED

(if the transaction is subject to curtailment:)
PROVIDER_ACTION
CAPACITY_LIMIT
CURTAILMENT_OPTIONS
SECURITY_REF
- INITIATING_PARTY (e.g, CA/TP code?)
- RESPONSIBLE_PARTY (e.g., SC code?)
- PROCEDURE_NAME (e.g., “TLR”, or registered?)
- PROCEDURE_LEVEL (e.g., “2a”, “3”)
- FACILITY_LOCATION (e.g, “internal” or “external”)
- FACILITY_NAME
- FACILITY_CLASS (e.g., transformer, etc.?)
- FACILITY_LIMIT_TYPE (e.g, thermal, stability, etc.?)

4.3.4.2 Security Event (*security*)

Security Event (***security***) provides information on transmission security/reliability events that may impact the Provider’s ability to schedule transactions. The TIME_OF_LAST_UPDATE, START_TIME, and STOP_TIME query variables select those particular security event postings updated and/or effective: 1) on or after a particular point in time (START_TIME alone), 2) before a particular point in time (STOP_TIME alone), or 3) between particular points in time (START_TIME and STOP_TIME).

The SECURITY_REF data element is a Provider unique identifier assigned to each posting

of security related information. SECURITY_TYPE identifies the type of information posted for the event; restricted values are OUTAGE for postings reflecting the state of critical transmission facilities, and LIMIT for postings reflecting the implementation of security procedures to limit or reduce scheduled transactions. The INITIATING_PARTY identifies by Control Area, Security Coordinator or Transmission Provider code the entity calling for the "outage" or "limit", and RESPONSIBLE_PARTY identifies the entity (Control Area, Transmission Provider, or Security Coordinator) responsible for administering any resulting security procedure that may be instituted.

PROCEDURE_NAME and PROCEDURE_LEVEL reflect the specific security procedure and, if applicable, the step, stage, or level within that procedure being implemented by RESPONSIBLE_PARTY (e.g., NERC TLR is a recognized security procedure, and level "2a" is a step within that procedure). FACILITY_NAME, FACILITY_CLASS, and FACILITY_LIMIT_TYPE provide specific information related to the impacted transmission facility. FACILITY_LOCATION identifies if the impacted facility is internal or external relative to the Transmission Provider's scope of authority over the named facility.

START_TIME and STOP_TIME reflect the period of time encompassed by the particular security event posted. In cases where a security procedure is invoked and then progresses through various levels or stages, there shall be separate postings for each of those stages declared by RESPONSIBLE_PARTY with START_TIME and STOP_TIME reflecting the period of time each specific level of the procedure was in effect.

Template: ***security***

1. **Query**
   START_TIME
   STOP_TIME
   TIME_OF_LAST_UPDATE

2. **Response**

   TIME_OF_LAST_UPDATE
   SECURITY_REF
   SECURITY_TYPE (e.g., "OUTAGE", "LIMIT"?)
   INITIATING_PARTY (e.g., CA/TP code?)
   RESPONSIBLE_PARTY (e.g., SC code?)
   PROCEDURE_NAME (e.g., "TLR", or registered)
   PROCEDURE_LEVEL (e.g., "2a", "3")
   FACILITY_LOCATION (e.g., "internal" or "external")
   FACILITY_NAME
   FACILITY_CLASS (e.g., transformer, etc.?)
   FACILITY_LIMIT_TYPE (e.g., thermal, stability, etc.?)

START_TIME
STOP_TIME

4.3.4.2 Transmission Reservation Reduction (*reduction*)

Transmission Reservation Reduction (***reduction***) provides information related to the reduction in the Transmission Customer's rights to schedule use of all or a portion of reserved capacity. Specific cases where such a reduction in reserved capacity that would be returned in response to this query template include: secondary market sales (as posted using the ***transassign*** or ***transsell*** templates via the REASSIGNED_REF, etc., data elements), or a Transmission Provider's interruption of the reservation to accommodate higher priority reservations over the interruption interval.

The CAPACITY_REDUCED indicates the MW reduction made to the originally reserved capacity over the designated START_TIME/STOP_TIME interval for the reason specified in REDUCTION_REASON. The CAPACITY_AVAILABLE is the originally reserved MW capacity less ALL reductions applied to that reserved MW amount over the START_TIME/STOP_TIME interval.

Template: ***reduction***

1. **Query**
   START_TIME
   STOP_TIME
   ASSIGNMENT_REF

2. **Response**

   TIME_OF_LAST_UPDATE
   ASSIGNMENT_REF
   REDUCTION_TYPE (e.g., REASSIGNMENT, INTERRUPTION)
   REDUCTION_REASON
   START_TIME
   STOP_TIME
   CAPACITY_REDUCED
   CAPACITY_AVAILABLE

Appendix B
Information Posted on NERC TLR Web site

INTRODUCTION

In the Open Access Same-time Information System Final Rule issued by the FERC on May 27, 1999 [Docket No. RM98-3-00; Order No. 605], the Commission directed the Market Interface Committee and the How WG to prepare a report "outlining what additional supporting information about curtailments and interruptions should be posted on the OASIS and available for query". As part of this effort, the Interchange Distribution Calculator (IDC) Working Group was asked to identify any information concerning curtailments that could be made available from the IDC for posting at a central, publicly available site in lieu of being independently posted on several OASIS sites by the numerous Transmission Providers involved in a typical curtailment.

The purpose of this Appendix is to identify the curtailment information available from the IDC. It should be noted that the IDC only contains information about curtailments resulting from initiation of the NERC TLR Procedures. It does not contain information that is directly related to curtailments or interruptions caused by Transmission Providers acting on their own within the terms of their individual tariffs.

TYPES OF INFORMATION DESIRED ON OASIS

In the "Comments" section of part A.3 of the Final Rule, the Commission lists specific types of information that were identified by commenters to the Notice of Proposed Rulemaking as being desirable for posting on the OASIS. The specific types of information are repeated *verbatim* below for clarity and completeness.

- Whether transactions are being cut hourly or daily
- The number of transactions
- The total amount in megawatts of each curtailment
- Hourly load data
- Generation output levels
- The names of impacted parties to the curtailment
- The magnitude of the curtailment
- Each transaction that is halted or curtailed
- The time at which halting or curtailment commenced
- Which Security Coordinator instituted the TLR procedures that led to such a halt or curtailment
- The name of the transmission facility or flowgate for which the TLR procedures

were instituted

- What level in the TLR procedures has been called
- What paths are affected by the TLR procedures
- The quantity of megawatts per hour necessary to halt or curtail in order to achieve the desired relief for the constrained transmission facility or flowgate
- The total aggregate of megawatts per hour halted or curtailed
- The quantity of megawatts per hour that are made available as a result of such a halt or curtailment that would not have otherwise been available.

Some of the above types of information appear redundant and others are subject to interpretation. Therefore, rather than trying to address each item individually, this Appendix will explicitly identify information that is presently planned to be provided from the IDC for the NERC TLR Logs and additional information that could be made available from the IDC for posting at a central site. Also, information that cannot be provided by the IDC will be identified.

INFORMATION TO BE POSTED IN THE NERC TLR LOGS

The IDC Working Group and the IDC vendor are presently completing the specification of a new function of the IDC that will semi-automatically create a NERC TLR Log. The completed logs will be forwarded to the NERC ftp site or web site where they will be publicly available for viewing.

When a Security Coordinator first issues a new TLR via the IDC, a new TLR Log report form will be automatically created and populated with the following information

- The initiating Security Coordinator name
- The date and time the new TLR was issued
- The constrained flowgate name and number
- The Outage Transfer Distribution Factor (OTDF) for OTDF flowgates
- The contingent flowgate name for OTDF flowgates
- The TLR level
- For TLR levels 3 and 5, the total cuts ordered by transmission service priorities (e.g., 200 MW of NS-1, 150 MW of NH-2, etc.)

The Security Coordinator will then enter the following information on the TLR Log report form. This event level information is also proposed to be available to Customers:

- The present flow on the constrained flowgate
- The post-contingent flow on the constrained flowgate
- The MW limit on the constrained flowgate
- The present flow on the contingent flowgate
- Comments about actions taken

- Description of initial conditions exacerbating the problem
- User-defined ID number

Whenever the Security Coordinator changes the TLR status (e.g., a change in TLR level), the previously generated TLR Log report form will be automatically updated to reflect the new TLR level, the time the TLR level changed, and the new aggregate of cuts by service priority (if new cuts are ordered). The Security Coordinator will also be able to enter new comments about actions taken relevant to the change in TLR status. Once the Security Coordinator has terminated the TLR event by issuing a TLR level 0, the IDC will remind the Security Coordinator to terminate the TLR Log report from and request that it be sent to the NERC ftp site or web site.

OTHER (FUTURE) INFORMATION AVAILABLE FROM THE IDC

It should be noted that the total cuts ordered by transmission service priority does not necessarily reflect the actual curtailments that get implemented. The MW value automatically generated by the IDC is the sum of each individual schedule curtailment within a priority "bucket" as prescribed by the IDC "share the pain" algorithm. If the actual curtailments are different than the prescribed ones, the initiating Security Coordinator can edit the MW value field to reflect the actual total cuts if he/she is made aware of any deviations from the prescription. The scope, schedule, and cost of this new function are yet to be approved.
It is also possible to derive more information about curtailments from the data in the IDC and post this information at a central site. However, there are no current initiatives to do so. The following list identifies information similar to the desired information listed in the Final Rule that it would be possible to extract from the IDC with additional programming.

- The total number of transactions included in a prescribed curtailment list
- The tag ID of each transaction included in a prescribed curtailment list
- The Transmission Providers and Control Areas on the contract path of each transaction in a prescribed curtailment list
- The amount of relief requested on the flowgate for which the TLR was initiated
- The amount each transaction is prescribed to be curtailed
- The total relief provided if the prescribed curtailments are made
- The individual relief each transaction will provide if the prescribed curtailments are made
- The actual amount each transaction on the prescribed curtailment list is curtailed (if the Security Coordinator for the sink Control Area enters this value in the provided field on the TLR curtailment list)
- The transactions scheduled to start or increase next hour that should be halted for a TLR level 2A, allowed to start or increase for a TLR level 2B or 2C, or curtailed *pro rata* for a TLR level 2B or 2C
- The Control Area source/sink pairs that are affected by the constrained flowgate

It is not currently possible to predict when any of this additional information could be made publicly available on a central site. The IDC project plan includes upgrades and enhancements that are to be developed and tested well into the year 2000. If there is a Commission directive to enhance the IDC to provide for the central posting of additional curtailment information, then the IDC Working Group, IDC Steering Committee, and the IDC vendor will have to work together to modify the scope, schedule, and cost of the IDC project.

Once again, it should be noted that the curtailment information available from the IDC is relevant only to curtailments resulting from initiation of TLR procedures, and represents the curtailment actions prescribed by the IDC algorithms. Actual curtailments that deviate from the prescription may not necessarily be made known to the initiating Security Coordinator; therefore, they would not necessarily be available to extract from the IDC.

DESIRED INFORMATION NOT AVAILABLE FROM THE IDC

The following types of information listed in the Final Rule are not available from the IDC:

- Hourly load data
- Generation output levels
- Names of the impacted parties to the curtailment
  Only the TPs and CAs on the path and the PSE name contained in the Tag ID are known to the IDC. The IDC has no knowledge of intermediary PSEs.
- The time at which halting or curtailment commenced.
  Although the time at which a TLR is issued will be captured by the IDC, it will not have information relating to the time the actual cuts were made. This information would have to be obtained from the individual Control Areas or PSEs involved.
- Information relating to MegaWatt Hours
  The IDC only suggests the amount of MegaWatts which need to be curtailed to reduce flows on particular elements. MegaWatt Hour values are used primarily for accounting purposes and are not used in the IDC.
- Whether the cuts are being made hourly or daily
  The IDC suggests curtailments of specific transactions for particular hours. The duration of the cuts cannot be predicted by the IDC software as this depends on the many other factors affecting flows like weather changes, load patterns, and generation shifts.

It is not envisioned that this information will ever be available from the IDC since the IDC does not need this information to perform any of the calculations or functions currently implemented or contemplated for future upgrades.

There may be other information alluded to in the Final Rule that may never be available from the IDC. It is difficult to be certain because of the subjective nature of interpreting the descriptions of the desired information.

Appendix C
Changes in OASIS S&CP to OASIS Response Time Requirements

The following revisions are proposed to the OASIS node performance requirements. The proposed metrics are viewed by the How WG to be more practical and relevant measures of node response time.

5.3 OASIS RESPONSE TIME REQUIREMENTS

TSIPs can only be responsible for the response capabilities of two portions of the Internet-based OASIS network:

- ~~The response capabilities of the OASIS Node server to process interactions with Users~~
- ~~The bandwidth of the connection(s) between the OASIS Node server and the Internet.~~
- The utilization of the internet interconnections
- The response capabilities of the OASIS Node server to process interactions with Users

To provide measurement to these capabilities measured at 5 minute sample intervals:

- An OASIS node's Internet connection(s) should not exceed 60% sustained utilization, for more than 80% of the samples.
- A TRANSSTATUS query for one assignment reference shall take no longer than 30 seconds, as measured at the OASIS node, 80% of the samples, as measured at the server.
- A TRANSOFFERING query for 168 hours of hourly TTC for one path and one provider shall take no longer than 60 seconds, as measured at the OASIS node, 80% of the samples as measured at the server.

~~Therefore, the OASIS response time requirements are as follows:~~

a. ~~**OASIS Node Server Response Time:** The OASIS Node server shall be capable of supporting its connection(s) to Users with an average aggregate data rate of at least "A" bits per second. "A" is defined as follows:~~

~~$A = N^{*} R$ bits/sec~~

~~where:~~

N = 5% of registered Customers.

and

R = 28,800 bits/sec per Customer.

b. **OASIS Node Network Connection Bandwidth:** The bandwidth "B" of the OASIS Node connection(s) to the Internet shall be at least:
$B = 2^{*} A$ bits/sec

c. **Time to Meet Response Requirements:** The minimum time responses shall be met **within 1 month of User registration** for any single new User. If more than 10 new Users register in one month, 2 months lead time shall be permitted to expand/ upgrade the OASIS Node to meet the response requirements.