

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555-0001

June 30, 2000

**NRC REGULATORY ISSUE SUMMARY 2000-11
NRC EMERGENCY TELECOMMUNICATIONS SYSTEM**

Addressees

All holders of operating licenses for nuclear power reactors.

Intent

The U.S. Nuclear Regulatory Commission (NRC) is issuing this regulatory issue summary (RIS) to inform addressees about impending changes to the currently installed NRC Emergency Telecommunications System (ETS). This RIS provides information on the process that will be followed to modify the ETS at power reactor sites. This RIS also notifies addressees about a voluntary, optional approach that would utilize corporate emergency telecommunications systems in lieu of the NRC's dedicated circuits for providing ETS service.

Background Information

The ETS provides seven communication functions to nuclear power reactor emergency response facilities. These communication functions are considered essential to the NRC response to an event at a nuclear power plant. The ETS service is currently provided using direct access lines (DALs) to the Federal Government's long distance network, FTS 2000. These dedicated lines provide a direct connection to FTS 2000 and are not switched at the local central office. This design feature is important because of possible call volume saturation at the local telephone office during an emergency. The FTS 2000 contract will expire in December 2000. The General Services Administration has entered into follow-on contracts with MCI WorldCom and Sprint for long distance service. The new service is called FTS 2001, and NRC has selected MCI WorldCom as its FTS 2001 provider. All current ETS service is included in the NRC plans for conversion to FTS 2001, and the transition will occur between August and October of 2000.

In reviewing the options for a post-FTS 2000 ETS in SECY-98-194, (Accession No. 9812110073) the NRC identified a potential efficiency enhancement. The primary purpose of the DALs is to provide access to long distance networks independent of the local telephone switch. A consultant study and a survey of a representative cross section of licensee sites indicate that most utilities have established corporate telecommunications capabilities that already provide access to long distance networks without having to go through a local telephone company switch. Therefore, ETS functionality could be provided over corporate networks at minimal cost to licensees; this measure would eliminate the large recurring costs associated with the NRC's dedicated circuits.

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Licensee costs would be restricted to costs associated with rerouting the ETS circuits to the licensee's network. All long distance charges would continue to be paid for by the Government.

Summary of Issue

The NRC requires reliable emergency telecommunications capability at nuclear power plants in 10 CFR 50.47(b)(6) and 10 CFR Part 50, Appendix E. The telecommunications functions related to communication between the NRC and nuclear power plant control rooms and emergency response facilities are currently provided by the NRC utilizing dedicated circuits to the FTS 2000 network. Because of the expiration of the FTS 2000 contract, the ETS circuits will be transferred to the follow-on FTS 2001 system using MCI WorldCom as the service provider. The methodology for the service transition is discussed in Attachment 1.

In SECY-98-194, the NRC staff identified options for more efficiently providing ETS services for nuclear power plants. The option supported by the staff and approved by the Commission would involve the use of preexisting licensee communications networks to provide access to long distance service in a manner that would be independent of the local telephone switch. In the original formulation of this plan, rulemaking was the anticipated vehicle for accomplishing this goal. Consistent with the Commission's decision on using industry initiatives in the regulatory process, the staff has pursued the concept of a voluntary industry initiative to provide ETS functionality using corporate communications networks through the Nuclear Energy Institute (NEI). A number of utilities have already expressed interest in the initiative.

The NRC staff will continue to support the optional use of licensee communications networks to provide long distance access to ETS circuits in those cases in which the licensee's network can route ETS calls to long distance service independent of the local telephone switch. Details of this alternative approach are provided in Attachment 2. Licensees that desire to implement this option in lieu of the planned cutover to FTS 2001 should notify the NRC ETS Project Officer, John Jolicoeur, through their NRR Project Manager as soon as possible (preferably before July 30, 2000). Requests received after July 30 will be accepted, but it may be too late to preempt the installation of FTS 2001 service.

Please note that NRC staff will host a one-day workshop for those licensees who are planning to implement the voluntary alternative described in Attachment 2 or are interested in obtaining additional information about this option to make an informed decision. The workshop is tentatively scheduled to be held on July 21, 2000, at the NRC Region III offices in Lisle, Illinois. More detailed information concerning the workshop agenda and confirmation of the date on which the workshop will be held is provided on the NRC Home Page which can be accessed using the following URL: <<http://www.nrc.gov/NRC/PUBLIC/meet.html#RIII>>. The NRC point of contact for prospective workshop attendees is John Jolicoeur, who can be reached at 301-415-6383.

Emergency Plan Revisions

Emergency Plan revisions to reflect the changes made to licensee's emergency telecommunications systems as a result of this RIS may be made in accordance with 10 CFR 50.54(q) and need not be submitted to the NRC for prior approval. Nevertheless, licensees are required under 10 CFR 50.54(q) to conduct an analysis to determine that there has been no decrease in the effectiveness of the plan as a result of these changes. Licensees should use this RIS as a part of its basis for that determination.

Backfit Discussion

This RIS requires no action or written response. Any action on the part of addressees to utilize corporate communications systems to provide ETS circuits is strictly voluntary. Any modifications made in the transition to FTS 2001 will be modifications to the NRC system. Since neither of these items constitutes a backfit under 10 CFR 50.109, the staff did not perform a backfit analysis.

Federal Register Notification

A notice of opportunity for public comment on this RIS was not published in the *Federal Register* because the NRC has worked closely with NEI, industry representatives, and other stakeholders in an open public forum since late 1998 on the need to upgrade the NRC ETS service. Furthermore, the optional use of licensee communications networks to provide long distance access to NRC ETS circuits, although a more efficient application of existing communications capabilities, is strictly voluntary.

Paperwork Reduction Act Statement

This RIS contains a voluntary information collection that is subject to the Paperwork Reduction Act of 1995 (22 U.S.C. 3501 et seq.). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid Office of Management and Budget (OMB) control number. The collection of this information is covered by OMB clearance number 3150-0011, which expires on September 30, 2000.

If there are any questions about this matter, please contact one of the persons listed below.

/RA Charles E. Ader Acting for/
David B. Matthews, Director
Division of Regulatory Improvement Programs
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Technical contact: John R. Jolicoeur, Incident Response Operations (IRO)
301-415-6383
E-mail: jrj1@nrc.gov

Lead Project Manager: William O. Long, NRR
301-415-3026
E-mail: wol@nrc.gov

Attachments: 1. Methodology for NRC Emergency Telecommunications System
(ETS) Transition From FTS 2000 to FTS 2001
2. Voluntary Alternative Emergency Telecommunications
System (ETS) Implementation
3. List of Recently Issued NRC Regulatory Issue Summaries

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DATE	06/29/00	06/29/00	06/29/00	06/29/00	06/30/00

METHODOLOGY FOR NRC EMERGENCY TELECOMMUNICATIONS SYSTEM (ETS) TRANSITION FROM FTS 2000 TO FTS 2001

At those locations in which the use of licensee communications networks is not an option or in which the licensee chooses not to implement the option, the transition from the FTS 2000 (AT&T) network to the FTS 2001 (MCI) network will take place.

The three types of transition cutovers are as follows:

1. Parallel – All new facilities are utilized, including the customer-provided equipment (CPE). There are no contingency options needed for this type of cutover as all functions are run in parallel before cutover.
2. Managed – The new facilities can only be installed to a point within the user's building and not to the final termination point or the CPE. The gaining vendor (MCI) is responsible for managing all facets of the transition process. Contingency options that allow the NRC to fall back on AT&T-provided facilities are necessary if operational requirements are not met under the new service.
3. Coordinated – This type of cutover should only be used when all other options have been exhausted. This option does not allow for any contingency plans and is, therefore, the option with the highest risk. The NRC ETS services will, for the most part, utilize the managed cutover option. The use of a coordinated cutover will only be implemented when the local exchange company (LEC) access is unable to accommodate the installation of new services to the licensee's main distribution frame (MDF). Timelines for the three types of cutovers are listed at the end of this methodology.

The following methodology will be used to perform the ETS transition in order to minimize the overall risk to the ETS transition:

Pre-Transition Testing: Before the local exchange company's firm order confirmation (FOC) date for the delivery of the new service, each of the NRC ETS functions should be tested by the licensee to achieve the following:

1. Ensure the continuity of the licensee-provided inside wiring.
2. Minimize the impact of problem resolution during the transition process.

Transition Rotation: If there are limitations to the availability of inside wiring with respect to the Control Room from the MDF, each of the ETS functions will be rotated in the manner described below using existing wiring, where possible. **[Note:** (1) Each step of the transition will be tested as described under Testing Methodology to ensure full duplex call completion and connectivity; (2) At those locations in which the Emergency Offsite Facility (EOF) is fed by different LEC facilities than the main plant, the Management Counterpart Link (MCL) and the Operations Center Information Management System Local Area Network (LAN) functions have been

removed from the plant Technical Support Center (TSC); (3) The Emergency Response Data System (ERDS) does not exist at the EOF.]

1. When possible, a spare cable pair into the Control Room or the Emergency Notification System (ENS) connection in the TSC shall be used to test the MCI-provided ENS function. If a spare cable pair does not exist or the TSC ENS use interferes with the operating ENS connection, one of the counterpart links in the TSC shall be used to test the new MCI ENS as described under Testing Methodology. Once the new MCI ENS has been functionally tested and accepted, a managed transition of the Control Room and TSC locations will be performed, followed by another test and acceptance period.
2. The next function to be transitioned will be the Management Counterpart Link (MCL) where applicable. The inside wiring from the MDF to the TSC will be used to support the new MCL function. This practice will leave the FTS 2000 MCL terminated at the MDF of the site.
3. The next function to be transitioned will be the Protective Measures Counterpart Link (PMCL), which will be treated in the same manner as the MCL function.
4. The Reactor Safety Counterpart Link (RSCL) will be similarly transitioned next.
5. The Health Physics Network (HPN) function will be the next function to be transitioned and tested.
6. The ERDS located in the licensee's computer room will then be transitioned.
7. The final ETS function to be transitioned is the Operations Center Information Management System (LAN) function where applicable. If required, the LAN will be transitioned the same as in step 2 above.

Testing Methodology: Testing as part of this transition program is performed in two parts:

1. Pre-Transition Testing:
 - a. The licensee shall assist in the functional testing of each of the ETS functions before transition to ensure the existing cable path and the NRC CPE are functionally compliant with the service requirements.
 - b. Functional testing is defined as the ability of the ETS function to pass two-way call testing with the NRC Operations Center or other designated test point.
 - c. For those functions that do not pass the functional testing, isolation of the problem shall be conducted to ensure the continuity of the licensee's cable path, terminations, and the NRC CPE.

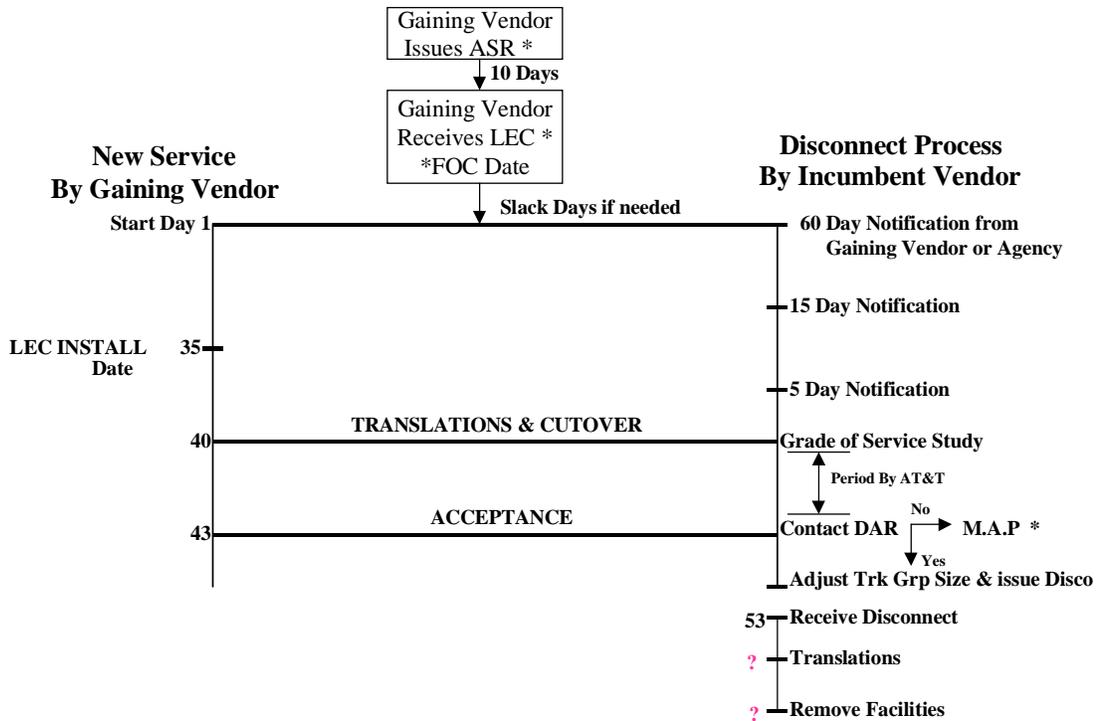
- d. If the licensee's cable path and the NRC's CPE are not at fault, the NRC ETS Technical Contact or designee shall be notified. The NRC shall open a trouble ticket with the FTS 2000 vendor for resolution. The NRC will be responsible for tracking the problem to resolution, and the licensee will provide assistance as necessary to resolve issues with the licensee's cable plant.
 - e. Once determined to be functional, the service will be declared ready for transition.
2. New Service Acceptance Testing
- a. The licensee shall assist the NRC in the functional testing of each of the new ETS functions as they are declared ready for customer acceptance testing by MCI.
 - b. The testing shall mirror the pre-transition testing, with non-functional services being referred immediately to MCI for resolution.
 - c. The NRC will be responsible for tracking the problem to resolution, and the licensee will provide assistance as necessary to resolve issues with the licensee's cable plant.
 - d. Once performed, the acceptance testing will recommence for verification and acceptance of the new service.

Information Dissemination: MCI will be responsible for providing the NRC and the licensee with circuit information and other pertinent information related to each of the functions.

Licensee Responsibilities: The licensee will be responsible for the following actions in support of this effort. It is estimated that a half-day will be required per site to perform the transition. A site is defined as a location at which all ETS functions are fed from the same MDF. When the EOF is fed by different LEC facilities than the main plant, the EOF is considered a separate site and an additional half-day is required. These additional sites will be treated as a new location for the purposes of the transition.

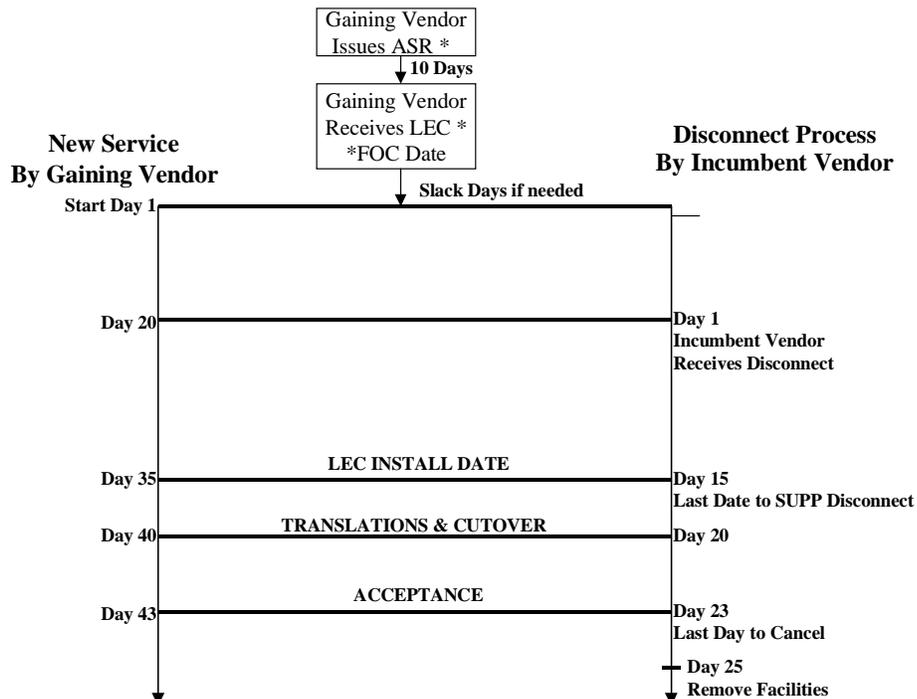
1. Making the cross-connect changes to accomplish the seven steps previously mentioned during the transition process.
2. Assisting the NRC in making continuity and/or functionality testing both before the installation as described in the pre-transition testing phase and as part of the service acceptance testing after transition.
3. Making available, when feasible, one preexisting cable pair from the MDF to the Control Room to support the new MCI ENS function as identified in step 1 of the above-mentioned transition rotation description.
4. Providing the necessary resources to accomplish these three functions.

FTS 2000/2001 PARALLEL CUTOVER NEW SERVICE & DISCONNECT TIMELINE

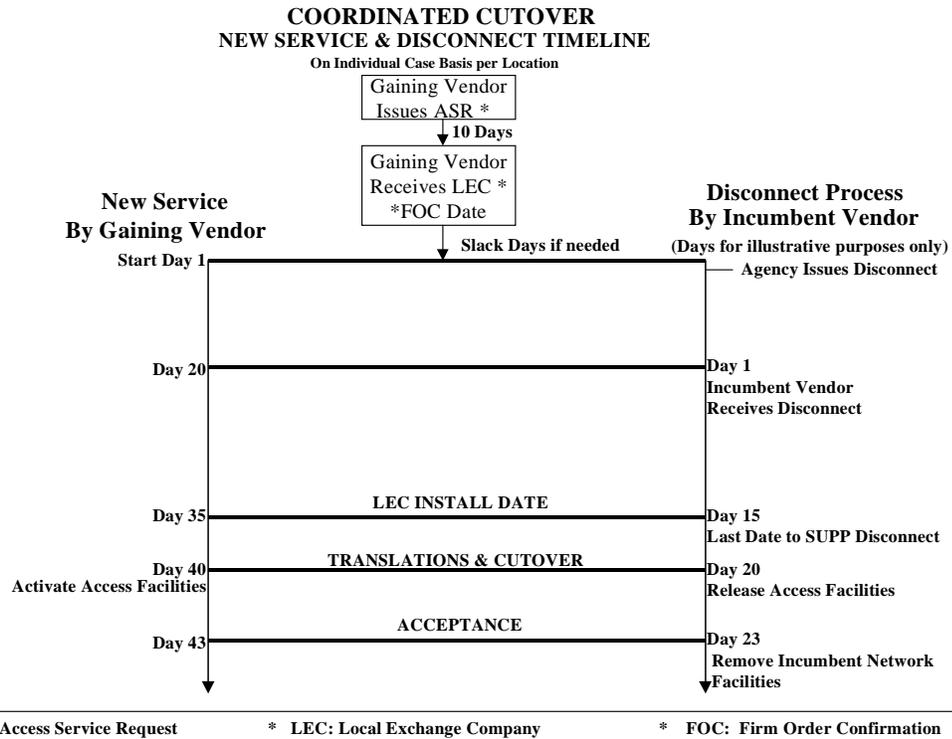


* ASR: Access Service Request * LEC: Local Exchange Company * FOC: Firm Order Confirmation
 * M.A.P: Modified Access Pricing which authorizes standby charges for excess access

MANAGED CUTOVER NEW SERVICE & DISCONNECT TIMELINE



* ASR: Access Service Request * LEC: Local Exchange Company * FOC: Firm Order Confirmation



The NRC will utilize its existing list of licensee telecommunications points of contact to support this effort. Questions regarding this matter should be directed to the NRC ETS Technical Contact as identified in the RIS. Specific questions regarding the FTS contract as it relates to the ETS may be directed to one of the NRC FTS Transition Managers listed below:

Stan Wood, OCIO
 301-415-7211
 E-mail: sdw@nrc.gov
 or

Benjamin Randall, Jr., OCIO
 301-415-7250
 E-mail: bwr@nrc.gov

VOLUNTARY ALTERNATIVE EMERGENCY TELECOMMUNICATIONS SYSTEM (ETS) IMPLEMENTATION

The NRC currently provides reliable long distance telephone service to nuclear power plant sites and remote Emergency Operations Facilities (EOFs) for the following seven essential telecommunications functions:

1. Emergency Notification System (ENS) – The ENS is used for communication between the NRC and the licensee. It is the normal circuit for event reporting. It is also used to communicate reactor safety-related information between the licensee and NRC during event response.
2. Health Physics Network (HPN) – The HPN is used for communication of radiological and meteorological information between the licensee and NRC during event response.
3. Reactor Safety Counterpart Link (RSCL) – The RSCL is used for communication between NRC reactor safety team personnel at the site, regional office and headquarters. The NRC Resident Inspector will normally communicate on this circuit.
4. Protective Measures Counterpart Link (PMCL) – The PMCL is used for communication between NRC protective measures team personnel at the site, regional office, and headquarters.
5. Management Counterpart Link (MCL) – The MCL is used for communication between the Site Team Leader (Director of Site Operations), the Headquarters Executive Team, and the regional Base Team Manager.
6. Operations Center Local Area Network (LAN) line (OCL) – The OCL is an analog phone line that is made available for accessing the NRC Operations Center LAN using laptop computers with internal modems.
7. Emergency Response Data System (ERDS) – One analog phone line per reactor unit is used for establishing the links between the licensee computer systems and the NRC ERDS.

This service is currently provided using direct access lines (DALs) to the Federal long distance service (FTS 2000), which is currently provided by AT&T (as shown in Figure 1). During the accident at Three Mile Island (TMI), telephone network congestion at the local telephone switch serving the site prevented the establishment of communications between the NRC and the site during the early phases of the accident. The current ETS design using DALs to bypass the local telephone switch ensures that emergency calls can be made even if the local telephone switch is congested as it was in the TMI accident. The NRC is aware that most nuclear power plants have corporate communications systems that do not depend on the local telephone switch. In those cases, it may be feasible for licensees to provide long distance access for all ETS functions.

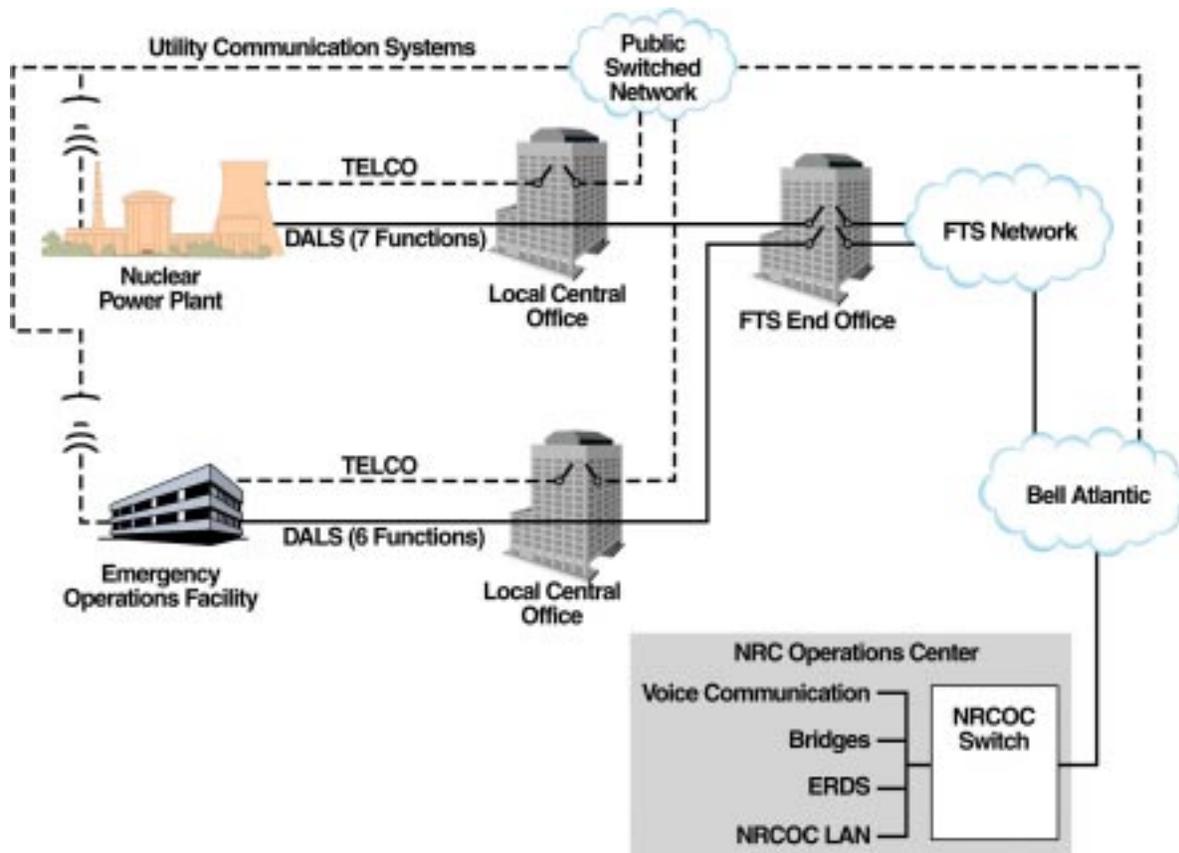


Figure 1: Existing NRC Telecommunications System

The staff would consider licensee telecommunications systems acceptable for the current ETS if they, like the DALs, do not rely on the local telephone switch. This idea is illustrated conceptually in Figure 2. The NRC believes that licensee telecommunications systems in many cases may be just as reliable as the DALs, especially if they can reach the public switched network (PSN) using independent means without going through the local telephone switch. The importance of independence was illustrated by the experience at Davis-Besse on June 24, 1998, when a tornado destroyed all modes of telecommunications at the site except the licensee's corporate microwave system. The Control Room operators had one circuit available on that network, which was used to communicate with the NRC, which subsequently notified the State authorities of the conditions on site. Examples of acceptable paths for ETS access to long distance networks include the following:

- Land lines through an onsite private branch exchange (PBX) out to the utility network
- A microwave link to the PSN (e.g., through a corporate office)
- A corporate fiber network
- A satellite system
- Any other telecommunications system or network that can provide long distance access independent of the local telephone switch.

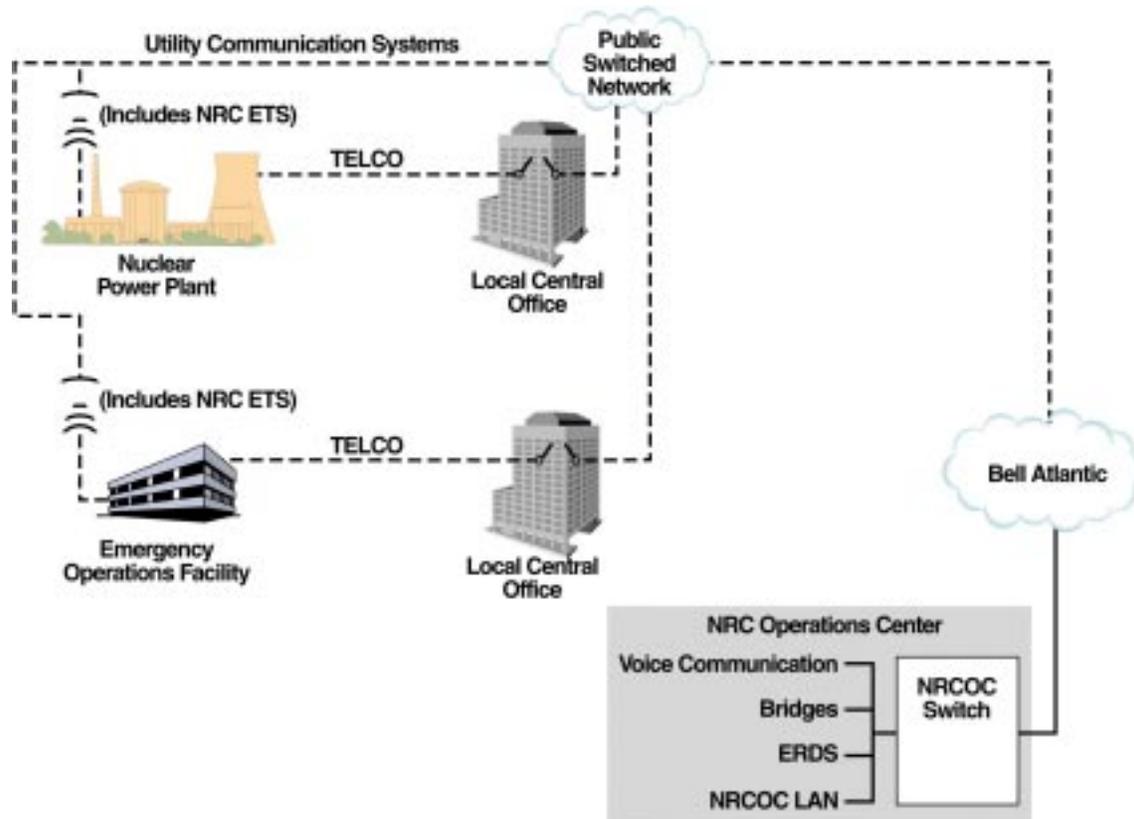


Figure 2: Proposed NRC Emergency Telecommunications System

In order for licensees to provide ETS access, the current ETS telephones or modems (for ERDS) would have to be re-routed to be carried on a corporate system as previously described. This task could be accomplished by routing the circuits through the site PBX. This measure would provide access to multiple paths for call routing. Otherwise, the circuits could be re-routed at the main distribution frame to the system selected for ETS services. If directed through a toll-free (800/888) exchange, the cost of long distance calls associated with ETS will be paid by the Government. In addition, the NRC Operations Center accepts all calls (toll-free, commercial, or collect) from any person reporting a nuclear emergency, regardless of whether the ETS is involved.

For those plants with offsite EOFs, the possibility exists that adequate communications facilities to implement this plan might only exist at one of the two locations (i.e., either the plant or the EOF). In this case, the methodology discussed above could be used at one of the two locations and FTS 2001 DALs would be provided at the other.

The portable satellite telephones provided to each NRC Resident Inspector will remain on site and will be made available for emergency reporting in cases of total loss of telecommunications to the site.

Implementation of this voluntary initiative would entail the following:

1. Reviewing site telecommunications capabilities to verify that ETS circuits can be provided access to long distance service by way of existing site systems that are independent of the local telephone switch that serves the site.
2. Notifying the NRC, in writing, of your intent to provide ETS services utilizing corporate communications systems. Your notification should describe the system proposed for providing ETS service and should give a point of contact.
3. Rerouting of all current ETS service through the onsite telephone system. Provide a list of the telephone numbers for the ETS circuits that have been placed on corporate communication systems to the NRC ETS Project Officer (John Jolicoeur, IRO).
4. Ensuring the ERDS and Operations Center LAN circuits are analog circuits.
5. Conducting tests of the newly installed circuits with the NRC Operations Center.
6. Revising procedures, as appropriate, for operation with the newly installed ETS service.
7. Providing dialing instructions at all ETS locations for each call routing option available.
8. Making arrangements with the NRC Senior Resident Inspector to the NRC's portable satellite telephones.

LIST OF RECENTLY ISSUED
NRC REGULATORY ISSUE SUMMARIES

Regulatory Issue Summary No.	Subject	Date of Issuance	Issued to
2000-10	Technical Information to Facilitate Public Access to the U.S. NRC Agencywide Documents Access and Management System (ADAMS)	06/30/2000	All NRC licensees
2000-09	Standard Review Plan for Licensee Requests to Extend the Time Periods Established for Initiation of Decommissioning Activities	06/28/2000	All material licensees regulated in accordance with 10 CFR parts 30, 40, and 70
2000-08	Voluntary Submission of Performance Indicator Data	03/29/2000	All holders of OLs for nuclear reactors, except for those licensees who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel
2000-07	Use of Risk-Informed Decisionmaking in License Amendment Reviews	03/28/2000	All holders of OLs for nuclear reactors, except for those licensees who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel
2000-06	Consolidated Line Item Improvement Process for Adopting Standard Technical Specifications Changes for Power Reactors	03/20/2000	All holders of OLs for nuclear reactors, except for those licensees who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel