Network Outage Reporting System User Manual

Version 3

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Version History

Version No.	Author	Revision Date	Reason
1.0	Calvin Gerard	3/6/17	Initial Issue
2.0	Tom Kelley	4/21/17	Updated content and figures
3.0	Jerome Stanshine	10/28/21	Updated content and figures, incorporated undersea

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1.   Introduction and Overview of the NORS Application

The FCC Network Outage Reporting System (NORS), designed in the ServiceNow platform – a cloud, workflow-based application, gives users the capability to report telecommunications outages directly to the Federal Communication Commission (FCC).

Through NORS, users can submit notifications and reports, update reports, and complete administrative actions. Users perform these core activities through the modules in the navigator on the left side of the ServiceNow content pane (Figure 1).
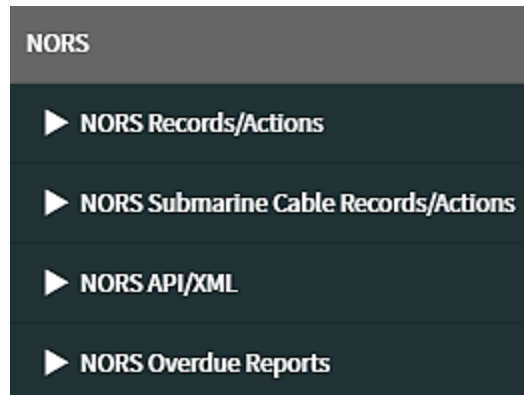
Figure 1. NORS options

As shown, the main groups of options for NORS filers are:

- NORS Records/Actions

- NORS Submarine Cable Records/Actions

- NORS API/XML

- NORS Overdue Reports

Each group of options in turn expands when a filer clicks on the triangle at the left of the group name. Figure 2 shows the NORS Records/Actions options. The NORS Records/Actions features primarily support the filing of reports on outages other than submarine cable outages, although there are some features to support submarine cable outages as well. The features available through the NORS Records/Actions include:

- Assign Yourself to a Company/Reporting Entity (including submarine cable reporting entities)
- Report Notification (of an outage other than a submarine cable outage)
- NORS Outages (other than submarine cable outages)
- NORS Outage History (of outages other than submarine cable outages)
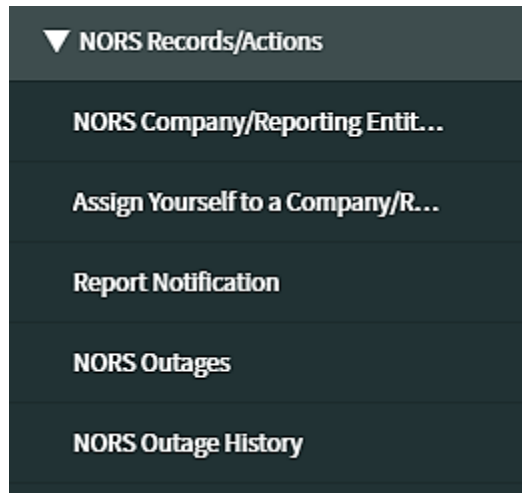
Figure 2. NORS Records/Actions Options[1]

Figure 3 shows the NORS Submarine Cable Records/Actions options. The features in this group support the filing of submarine cable outage reports. The features available through the NORS Submarine Cable Records/Actions include:

- Report SC Notification
- SC NORS Outages
- SC NORS Outage History
- Overdue SC Interim Reports
- Overdue SC Final Reports
- SC Final Reports Due in 5 Days
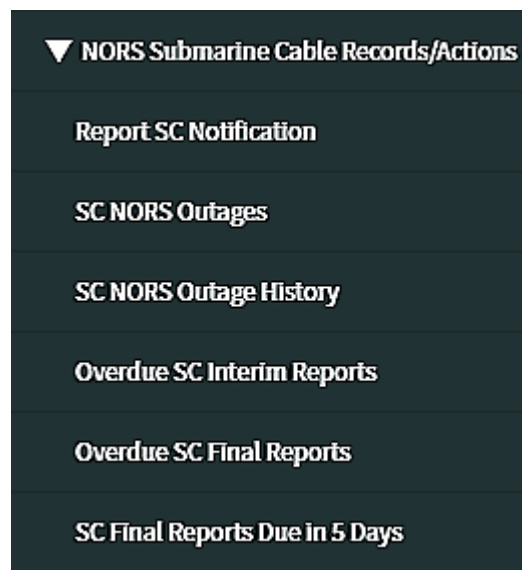
Figure 3. NORS Submarine Cable Reports/Actions Options

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[1] The "NORS Compnies/Reporting Entities" link appears in the coordinator's screen but not the inputter's screen.

NORS also has features to facilitate the exchange of outage data through Application Program Interfaces (API) and Extensible Markup Language (XML), accessible in the NORS navigator (Figure 4).

- Simple Object Access Protocol - SOAP API
- Representational State Transfer - REST API
- XML Upload
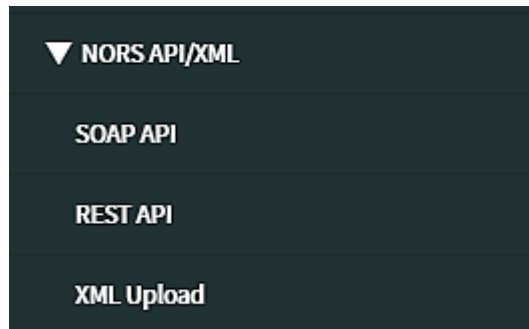
Figure 4. NORS API/XML Options

Finally, the NORS Overdue Reports group includes options to list various kinds of overdue or nearly overdue reports on non-submarine cable outages, as shown in Figure 5:
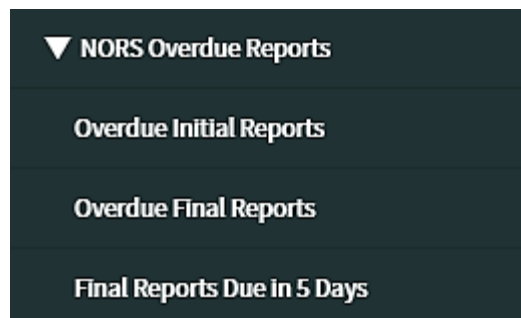
Figure 5. NORS Overdue Reports Options

Available options in this group can be used to generate lists of overdue or nearly overdue reports on outages other than submarine cable outages:

- Overdue Initial Reports
- Overdue Final Reports
- Final Reports Due in 5 Days

2.   Roles and Privileges

NORS user roles are defined for inputters, coordinators, and Department of Homeland Security (DHS) users. Privileges are applied to each role (see Tables 1, 2, and 3).

Table 1. Inputter Administrative Privileges

Inputter	
Records	• View and update outage reports user submitted. • View and update user profile.
Reports	• Search and view a collection of outage reports user submitted. • View a collection of outage reports user submitted that are overdue or close to deadline.
Actions	• Self-assignment of user to a company or reporting entity. • Report notifications. • Receive e-mail confirmation of all reports submitted by user.

Table 2. Coordinator Administrative Privileges

Coordinator	
Records	• View and update outage reports submitted by any member of user's company or reporting entity. • View and update user profiles of coordinator's assigned company or reporting entity.
Reports	• Search and view outage reports submitted by any member of the user's company or reporting entity. • View overdue outage reports submitted by any member of the user's company or reporting entity which are overdue or due within five days
Actions	• Assign new users to company or reporting entity.[1] • Report notifications. • Receive e-mail confirmation of all submitted reports for user's company or reporting entity

Table 3. DHS User Administrative Privileges

DHS User	
Records	• View all outage reports. • View and update user profile.
Reports	• Search for and view any collection of outage reports.

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[1] Some interaction with FCC staff is required to do this.

3. Accessing NORS for Submarine Cable and Non-Submarine Cable Users

3.1 Locating NORS

To locate the NORS application,

Either go directly to the NORS login screen (Figure 10) by inserting the following URL into a browser:
https://www.fcc.gov/licensing-databases/fcc-user-login?fromURI=https%3A%2F%2Ffcc-ext.okta.com%2Fapp%2Fservicenow_ud%2Fexkfhf7wsY5PvdJv4296%2Fsso%2Fsaml%3FSAMLRequest%3DnVPvb9owEP1XIn8nv0gptQApC5rG1HURsEnbl8mxL8VqYmc%252BJ9D%252Ffk6ghUkrmvot8r27e%252B%252FdywxZXcUNTVu7U2v43QJa71BXCumxMietUVQzlEgVqwGp5XSTfrmnsR%252FSxmirua6IlyKCsVKrTCtsazAbMJ3k8G19Pyc7axukQVBy7jqEj8ea0vvTF%252Fpc14FiXcMewReaeEtHRCrWT%252FyrfwQH6%252Bsny4YO1jTBedivVgRweCp35e0ef9zknfjcJfHdJEDUQS%252BHeB%252B14TCInZOSVQjEWy3nZPOQxWERJXcw5vwGkqkYx1GRFFMuCj4tpslk4oCYM0TZwbkVsYWVQsuUnZM4jKNRGI%252BicBvHNIpoOPbH09ufxMtPNn2QSkj1eN3T4ghC%252Bmm7zUf51812GNBJAebBod9l53cwOFjpNpDFbLgtHeiby3NfZ8ZebkwW%252F0dhFlwuOq1taK9itcx1Jfmzl1aV3mcGmHXKrGlhOFLN7NtcIj8aXqQYlQOUQs1klQphAJEEr4tOgQYxXNwl07r0eJmuG2Yk9nbAgXH7asglLKuc3DWU77LnKoxT3s92z32e9tqIPh%252FAHc%252BtYQobbeyLc%252F9itDgV39B3Ll%252F%252B1Is%252F%26RelayState%3Dhttps%253A%252F%252Ffccprod.servicenowservices.com%252Fnavpage.do

OR

1. Go to the FCC homepage (https://www.fcc.gov/).
2. Click on the **Browse by Category** menu located at the top of the page (Figure 6, red rectangle). Note: This menu allows users to view six separate drop down menus.
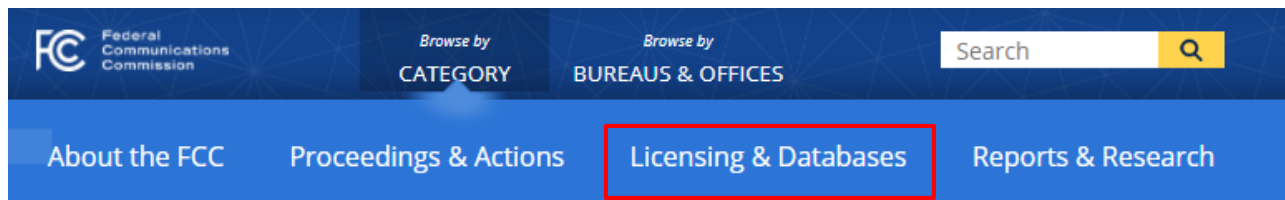
Figure 6. FCC Homepage

3. Click on the **Licensing & Database** tab (Figure 7, red rectangle).
4. Click on the **NORS** link (Figure 7, red arrow).
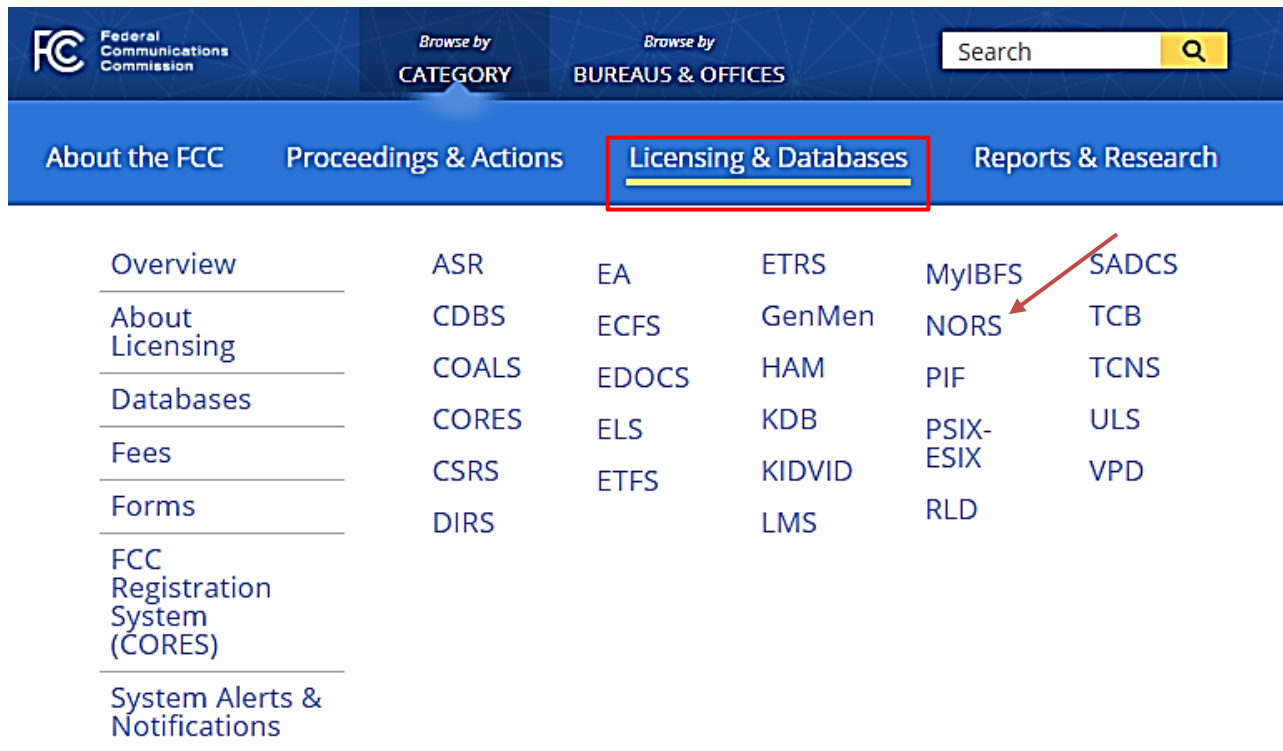
Figure 7. FCC Homepage > Licensing & Database Menu > NORS

3.2   Logging In

Selecting the FCC NORS link connects the user to the FCC NORS page, shown in Figure 8 (shown below and continuing onto the next page):

Network Outage Reporting System (NORS)

In 2004, the FCC established outage reporting rules to address the critical need for rapid, complete, and accurate information on significant communications service disruptions that could affect homeland security, public health or safety, and the economic well-being of the nation.

Under this framework, qualifying communication providers (wireline, cable, satellite, wireless, interconnected VoIP and Signaling System 7 providers) are required to report network outages that last at least 30 minutes and satisfy other specific thresholds in the Commission's Network Outage Reporting System (NORS). Data submitted to NORS is presumed confidential.

After determining that an outage is reportable, wireline, cable, satellite, wireless and Signaling System 7 providers must submit a NORS notification within 120 minutes with preliminary information. The service provider must submit an initial outage report within three calendar days, followed by a final report no later than 30 days after discovering the outage.

Interconnected VoIP providers must submit a NORS notification either: 1) within 240 minutes after discovering an outage that potentially affects a 911 facility or 2) within 24 hours of discovering an outage which affects potentially 900,000 user minutes and results in a complete loss of service or potentially affects any special offices and facilities. They must also file a final report within 30 days of discovering the outage.

Covered 911 service providers, or providers that aggregate 911 traffic from an originating service provider and deliver it to a 911 call center, must notify the designated official at the 911 call center as soon as possible but no later than 30 minutes after discovering an outage that affects a 911 call center. The covered 911 service provider shall convey all available information as well as a name, telephone number, and email address at

which the service provider can be reached for follow-up. The covered 911 service provider must also communicate additional material information to the affected 911 call center as it becomes available, but no later than two hours after the initial contact.

The Public Safety and Homeland Security Bureau's Cybersecurity and Communications Reliability Division (CCR) routinely analyzes NORS data to assess the magnitude of major outages, identify trends, and promote network reliability best practices that can prevent or mitigate future disruptions. This analysis also informs the agency's outage investigations and recommendations for improving network reliability.

NORS Login: https://www.fcc.gov/licensing-databases/fcc-user-login

NORS New User Registration: https://apps2.fcc.gov/fccUserReg/pages/createAccount.htm

NORS Password Reset: https://apps2.fcc.gov/fccUserReg/pages/reset-passwd-identify.htm

NORS Profile Update: https://apps2.fcc.gov/fccUserReg/pages/login.htm

Figure 8. FCC NORS page

Click on the "NORS Login" link, marked by a red arrow in Figure 8 above. The FCC User Sign-in screen, shown in   Figure 9, will become available.

Figure 9. FCC User Sign-in Screen

Click on the NORS icon as shown. The login screen will appear (Figure 10):

Figure 10. FCC Log-in Screen

3.2.1   Reset Password

If you have forgotten your password, wish to change your password for security reasons, or otherwise wish to change your password, click on "Need help signing in?" in the lower left corner of the Log-in screen. The Log-in screen then morphs into the following:

Figure 11. FCC Log-in Screen for Persons Needing Help Logging in

To change passwords, click on "Forgot password?" (Figure 11, red arrow) This will take you to the Reset Password screen (Figure 12):

Reset Password

Confirm your identity to reset your password.

Username: [   ]

The Username is the email address associated with your FCC Username Account.

[Cancel] [Create New Username]   [Continue »]

Figure 12. Reset Password

Enter the email address associated with your NORS account and press the "Continue" button. Then follow the instructions on the screen.

3.2.2   New Users

An inputter account must be created prior to logging into NORS.

1. Go In the "Login Screen for Persons Needing Help Logging In" (Figure 11), click on "Create Account".   The Create New Account screen (shown in Figure 13) should appear.
2. Enter all required information and select **Create Account** at bottom of screen (not shown in Figure 13).
Note: If a coordinator account Is desired, send a request to the NORS administrators: FCC-Outage@fcc.gov.

Create New Account

* indicates required field

Enter Username and Password

Please enter a valid email address. This email address will be used as your username when logging in to the FCC User Registration System and other systems using an FCC Username Account. Any notifications relating to your Username Account will be sent to the email address provided.

* Username: [   ] [Check Availability]

* Confirm Username: [   ]

Password must be 12 to 15 characters long, cannot include any part of your Username, and must meet all of the following criteria: 1 lower case letter, 1 upper case letter, 1 number, and 1 punctuation mark/special character.

To see a full list of allowable special characters, please click here.

* Password: [   ]

* Confirm Password: [   ]

Enter Additional Contact Information

Figure 13. Request New User Account

3.2.3 Assign Yourself to a Company or Reporting Entity

A person must have an association with a company or reporting entity to file an outage report. Employees can gain access to their company's or reporting entity's database by doing the following:

1. Click the **NORS Records/Actions** tab in the NORS navigator.
2. Click on *Assign Yourself to a Company/Reporting Entity* link (Figure 14, red arrow).
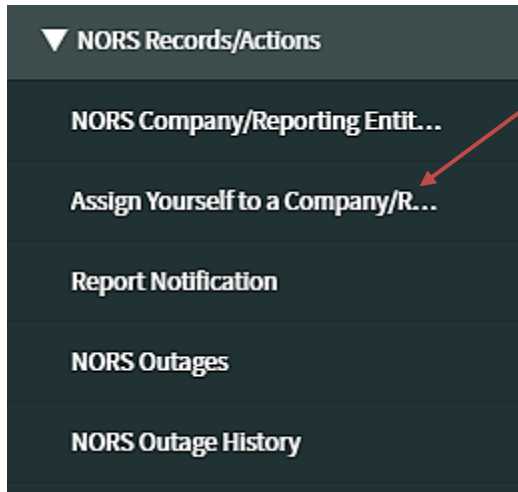
Figure 14. Assign Yourself to a Company/Reporting Entity

3. If the company is registered with NORS, click on *Yes, choose from a list* (Figure 15, red arrow) under the question *Register with an Existing Company/Reporting Entity*? [If you are registering a new company, skip to number 7 below.]

4. Enter the Company or Reporting Entity name and the Company or Reporting Entity Security Code (Figure 15, starred, mandatory fields) and click on Submit. If you do not know the security code, contact your company or reporting entity NORS coordinator.

Figure 15. Register with an Existing Company/Recording Entity, "Yes"

5. After the company/reporting entity and security code information are submitted, a dialogue box, "Confirm Company/Reporting Entity Details" with the question, "Are you sure you want to join this company?" will appear. If the company/reporting entity details are correct and you want to proceed with the association, select *Yes*. Figure 16).
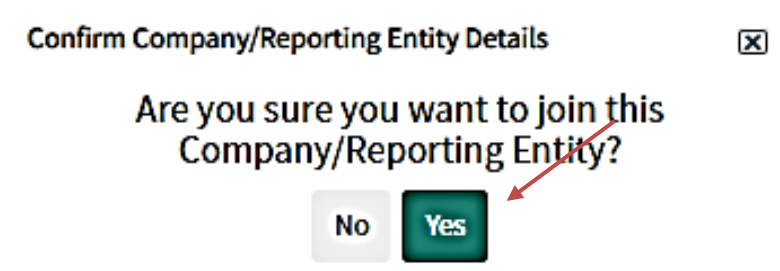
Figure 16. Confirm Company Details, Existing Company/Reporting Entity

6. After selecting **Yes**, the following type of screen alert is displayed (Figure 17).

ⓘ You have been added as an inputter to the company TEST COMPANY, and can now file outages.
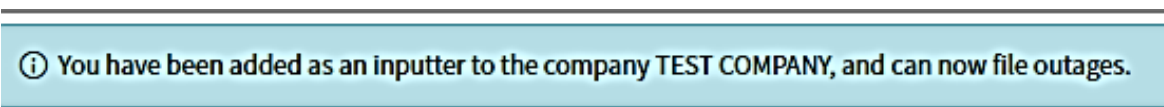
Figure 17. Alert Message: Added as Inputter to an Existing Company or Reporting Entity

This completes the process of adding yourself to an existing company. If you are also creating a new company, continue to step 7.

7. If there is no existing company or reporting entity, click on **No, create a new company/reporting entity** (Figure 18, red arrow) under the question **Register with an Existing Company/Reporting Entity?**

8. Create and enter the new Company/Reporting Entity name and Security Code (Figure 18, starred, mandatory fields) and click on **Submit**.
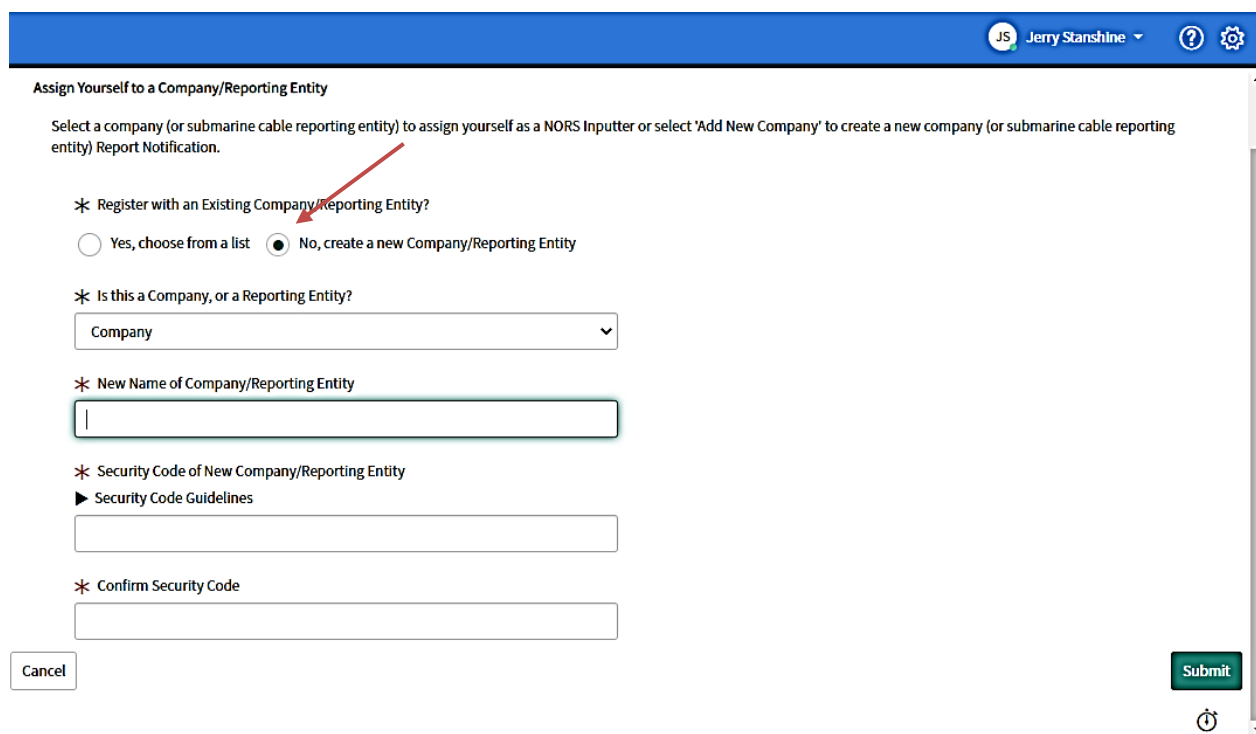
Figure 18. Create a New Company or Reporting Entity

9. After the company/reporting entity and security code information is submitted, a dialogue

box, "Confirm Company Details" with the question, "Please confirm new company details" appears. If the company details are correct select *Yes* (Figure 19).

Confirm Company/Reporting Entity Details   ☒

Please confirm new Company/Reporting Entity details.

No   Yes
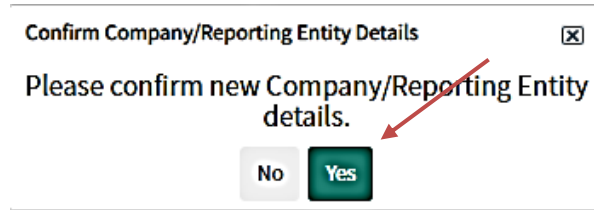
Figure 19. Confirm Company Details, New Company

10. After selecting *Yes*, the following screen alert is displayed (Figure 20).

ⓘ The Company, whoever has been created and you can now file outages under this company.
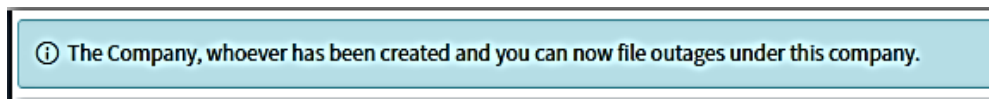
Figure 20. Alert Message: Added as Inputter to a New Company/Reporting Entity

3.3   Updating Profile

To update your profile in the ServiceNow system, click the username located in the top right-hand corner of the screen, and select the *Profile* link (Figure 21). The subsequent screen is self-explanatory. It permits changes to name, business phone, mobile phone, position title, email address, preferred date format, and preferred time zone.

3.4   Logging Out

To log out of the ServiceNow system (i.e., end the session and log out), click the username located in the top right-hand corner of the screen, and select the *Logout* link (Figure 21).

Profile

Logout
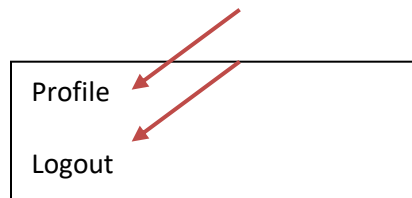
Figure 21. Changing Profile/Logging Out

4.   Reporting an Outage Other than a Submarine Cable Outage

Once the user has registered as an Inputter (existing or new, company and/or reporting entity), the user will have the ability to file an outage, update their outages that were filed, and review or withdraw the report.

4.1   Report Notification

To submit a notification:

1. Click on **NORS Records/Actions** (Figure 22).
2. Click on **Report Notification** (Figure 22, red arrow).
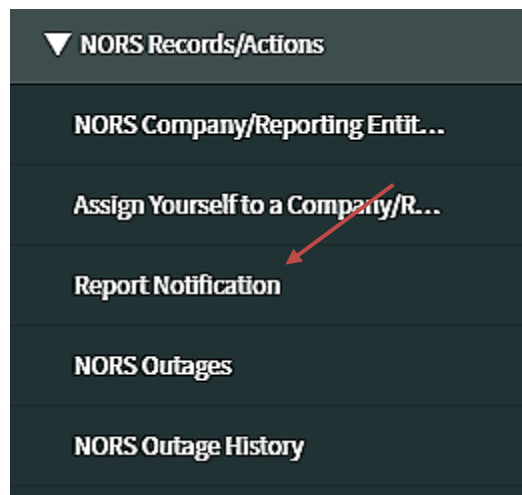
Figure 22. Report Notification

3. The blank NORS Outage notification screen appears and shows fields to be filled in (Figure 23). If you are a member of only one company or reporting entity, the "Company" field will default to that company's or reporting entity's name.

4. Populate the fields in each expandable section (Figure 23 below, mandatory fields with red asterisks). Note: In this example the first expandable section, Incident information, has been expanded.

Figure 23. NORS Outage Notification Report Page Tabs

5. After populating the mandatory fields, click on either **Submit Notification** located near the lower left corner of the screen or the other **Submit Notification** near the upper right corner of the screen (Figure 23, red arrows).

6. Once **Submit Notification** is selected, NORS displays a confirmation page, "Confirm Submission of Notification Report". Click on **Yes** to confirm submission (Figure 24).
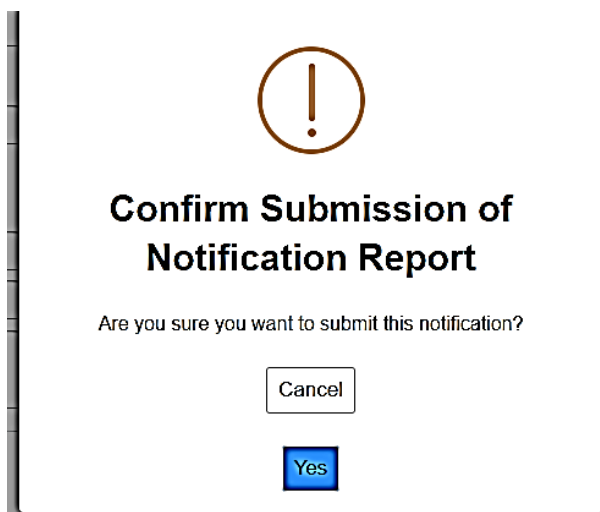
Figure 24. Submission of Notification Report Confirmation

7. When the submission of the notification report is confirmed, NORS Coordinators and the report Inputter are sent confirmation e-mails from "FCC NORS" verifying the submission of notification reports. Coordinators should ensure that e-mail can be accepted from <fcc-outage@fcc.gov> and should check their spam folder if these messages are not being received.

4.2   Submit Initial Report

To submit an Initial Report:

1. Click on **NORS Records/Actions** (Figure 25).
2. Click on **NORS Outages** (Figure 25, red arrow).

Figure 25. NORS Outages

3. Find the Notification from the list view in the "Notification" status that you want to update (Figure 26, red rectangle).
4. Select the ⓘ icon on the list view to open the NORS Outage Report form (Figure 26, red arrow).

Figure 26. Notification List View

5. Once the NORS Outage Report form is displayed, fill in the required information (expanding tabs as necessary) and click on **Submit Initial Report or Withdraw Report** (Figure 27, red arrows).

Figure 27. Submit Initial Report or Withdraw Report

6. To save a pdf copy of the report, click on one of the two "Export to PDF" buttons (Figure 27, red arrows).

4.3   Update Report (to Initial, Final, or Withdrawn)

To update a report:

1. Follow Steps 1-2, Section 4.2, *Submit Initial Report*.
2. Find the file that you wish to update, finalize, or withdraw.
3. Select the ⓘ icon on the list view to open the NORS Outage Report form.
4. Once the NORS Outage Report form is displayed, update the report, as needed.
5. After updates are made to a draft report, as shown in Figure 28, it can be exported to PDF, submitted as an Initial or Final Report, saved as a draft in NORS, or Withdrawn by clicking on the respective buttons. (If you have not yet submitted an initial report, the option to submit a final report may not be available.)

Figure 28. Update, Finalize, or Withdraw Report

6. If **Submit Initial Report** was selected, NORS should display a confirmation page, "Confirm Submission of Initial Report". Click on **Yes** to confirm submission (Figure 29).

Figure 29. Submission of Initial Report Confirmation

7. If **Submit Final Report** was selected, NORS displays a confirmation page, "Confirm Submission of Final Report". Click on **Yes** to confirm submission (Figure 30).

Figure 30. Submission of Final Report Confirmation

8. If **Withdraw Report** was selected, NORS displays the "Withdraw Report" dialogue box (Figure 31).

Figure 31. Withdraw Report Screen

9. Enter the reason for withdrawal and select **Withdraw** (Figure 31).

10. Once the request to withdraw a report is submitted, the user is asked to confirm the withdrawal of report; click on **Yes** in response to "*Are you sure you want to withdraw this report?*"

11. To verify the updated or current report type (i.e., the change to "Initial" or "Final" or "Withdrawn") click on **NORS Outages** (Figure 32).

Figure 32. NORS Outages

12. Once **NORS Outages** is selected, you can use a filter to find a specific outage. (Use of filters is described below in Section 4.5.) A list of outages satisfying the filter criteria will appear (Figure 33).

All > Class = NORS Outage Report > Outage Number starts with ON

	Outage Number	Report Type	Company	Previous Report Type	Incident Date and Time
ⓘ	ON-00101347	Notification	EXAMPLE COMPANY		2016-11-04 00:00:00
ⓘ	ON-00087305	Withdrawn	EXAMPLE COMPANY	Initial	2016-11-04 00:00:00
ⓘ	ON-00096470	Withdrawn	EXAMPLE COMPANY	Notification	2016-11-04 00:00:00
ⓘ	ON-00101323	Notification	EXAMPLE COMPANY		2016-11-04 00:00:00

Figure 33. Outage History List

13. NORS Coordinators and the Inputter receive confirmation e-mails from "FCC NORS" verifying the submission of an initial, final, or withdrawn report. Users should ensure e-mail can be accepted from <fcc-outage@fcc.gov> and should check their spam folder if these messages are not being received.

4.4   Request to Reopen an Outage Report

If you want to revise a NORS report that has been finalized or withdrawn, it will be necessary to have the report reopened.

1. To reopen a Final or Withdrawn Report, click the **Reopen Report** link (Figure 34, red arrow).

Figure 34. Reopen Report

2. Once the **Reopen Report** link is selected, NORS opens the "Request to Reopen Report" dialogue box (Figure 35).

Figure 35. Request to Reopen Report

3. Enter the company security code and the reason to reopen (Figure 35, starred mandatory fields) and select **Ok**.

4. Once the request to reopen a report is submitted, NORS displays "Request Submitted" dialogue box; click on OK (Figure 36)

Figure 36. Request to Reopen Acknowledgment

5. After the request is received, "FCC NORS" will send an email confirming receipt of the request. After the request is approved or rejected, "FCC NORS" will send email confirming the disposition of the request. Requesters should ensure that e-mail can be accepted from <fcc-outage@fcc.gov> and should check their spam folder if these

messages are not being received.

4.5   Create a File of NORS Reports

Grouping of NORS outage reports can be made from the NORS Outages and the NORS Outage History tabs.

1. Click **NORS Outages** or **NORS Outage History** (Figure 37).

Figure 37. NORS Outage Reports

2. Filter search results according to options. Enter the criteria of interest. To include additional criteria in the filter, press "AND" or "OR" for your filter query. Click "Run" after you have built the query. (Figure 38, red box and arrows).

Figure 38. NORS Outage Report Criteria

Figure 39. NORS Outage Report Formats

3. The user can now view a list of outage reports that meet the filter criteria (Figure 39). Right click the label at the top of any column, or the icon to the left of the label; select **Export**, and select the desired format (Excel, CSV, JSON, PDF) for the exported file (Figure 39, red arrows).

4.6 Obtain a List of Overdue Outage Reports

1. In the main NORS menu, click on **NORS Overdue Reports.**

Figure 40.NORS Overdue Reports

2. Click the **Overdue Initial Reports, Overdue Final Reports,** or **Final Reports Due in 5 Days** module in the application navigator (Figure 41).

Figure 41. NORS Reports

3. The requested list of reports will be displayed.

5. Reporting a Submarine Cable Outage

Once the user has registered as an Inputter (existing or new reporting entity), the user will have the ability to file an outage report, update their outage reports that were filed, and review or withdraw a report.

5.1 Report Submarine Cable Outage Notification

To submit a notification report:

1. Click on **NORS Submarine Cable Records/Actions** (Figure 42).
2. Click on **Report SC Notification** (Figure 42, red arrow). The NORS Outage Report form becomes available to record outage information.
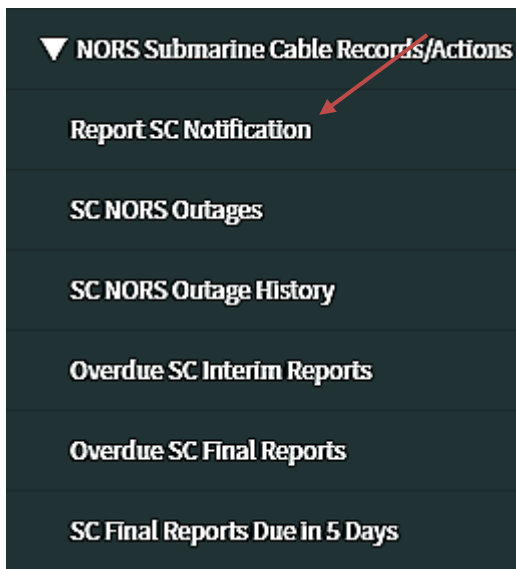
Figure 42. Submarine Cable Report Notification

3. The blank NORS Outage notification screen appears and shows fields to be filled in (Figure 43). If you are a member of only one reporting entity, the "Reporting Entity" field will default to that reporting entity's name.

4. Populate the fields in each expandable section (Figure 43 below, mandatory fields with red asterisks).

Figure 43. NORS Submarine Cable Outage Notification Report Page Tabs

5. After populating the mandatory fields, click on either **Submit Notification** located near the upper right corner of the screen (Figure 43, red arrow) or the other **Submit Notification** near the lower left corner of the screen (the latter <u>not</u> shown in Figure 43).

6. Once **Submit Notification** is selected, NORS displays a confirmation page, "Confirm Submission of Notification Report". Click on **Yes** to confirm submission (Figure 44).

Figure 44. Submission of Notification Report Confirmation

7. When the submission of the notification report is confirmed, NORS Coordinators and the report Inputter are sent confirmation e-mails from "FCC NORS" verifying the submission of notification reports. Coordinators should ensure that e-mail can be accepted from <fcc-outage@fcc.gov> and should check their spam folder if these messages are not being received.

5.2　Submit Submarine Cable Interim Report

To submit an Interim Report:

1. Click on **NORS Submarine Cable Records/Actions** (Figure 45).
2. Click on **SC NORS Outages** (Figure 45, red arrow).
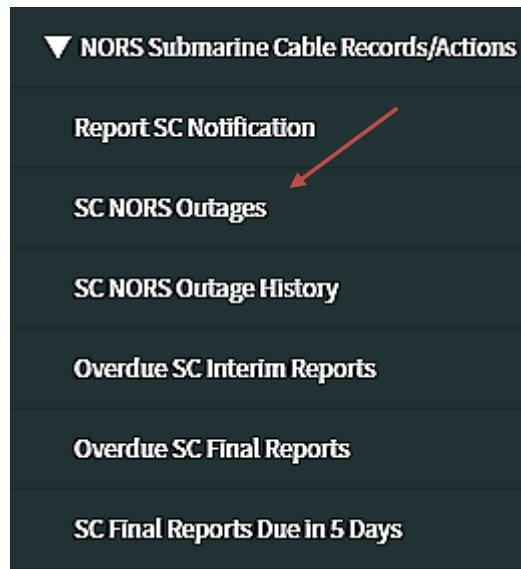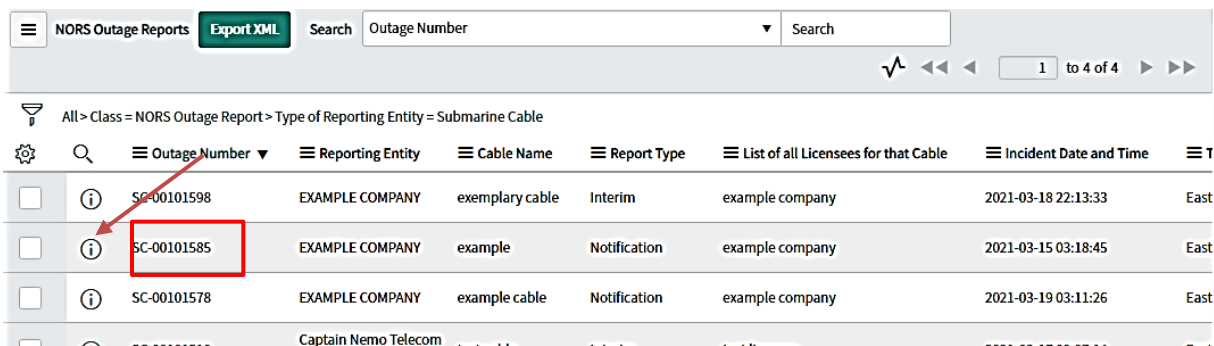
Figure 45. NORS Outages

3. Find the Notification from the list view in the "Notification" status that you want to update (Figure 46, red rectangle). NOTE: Submarine Cable outage report numbers will begin with the prefix "SC."
4. Select the ⓘ icon on the list view to open the NORS Outage Report form (Figure 46, red arrow).

Figure 46. Submarine Cable Outage List View

5. Once the NORS Outage Report form is displayed, fill in the required information (expanding tabs as necessary) and click on **Submit Interim Report or Withdraw Report** (Figure 47, red arrows).

Figure 47. Submit Interim Report or Withdraw Report

6. To save a pdf copy of the report, click on one of the two "Export to PDF" buttons. They appear near the lower left corner of Figure 47 and in the top middle of the Figure (green arrows).

5.3   Update Submarine Cable Report (Interim, Final, or Withdrawn)

To update a report:

1. Follow Steps 1-2, Section 5.2, *Submit Submarine Cable Interim Report*.

2. Find the file that you wish to update, finalize, or withdraw.

3. Select the ⓘ icon on the list view to open the NORS Outage Report form.

4. Once the NORS Outage Report form is displayed, update the report, as needed.

5. After updates are made to a draft report, as shown in Figure 48, it can be exported to PDF, submitted as an Interim or Final Report, saved as a draft in NORS, or Withdrawn by clicking on the respective buttons. (If you have not yet submitted an interim report, the option to submit a final report may not be available.)

Figure 48. Submit Interim or Final Report or Withdraw Report

6. If **Submit Interim Report** was selected, NORS displays a confirmation page, "Confirm Submission of Interim Report". Click on **Yes** to confirm submission (Figure 49).

Confirm Submission of Interim Report

Are you sure you want to submit this Interim Report?

Cancel

Yes
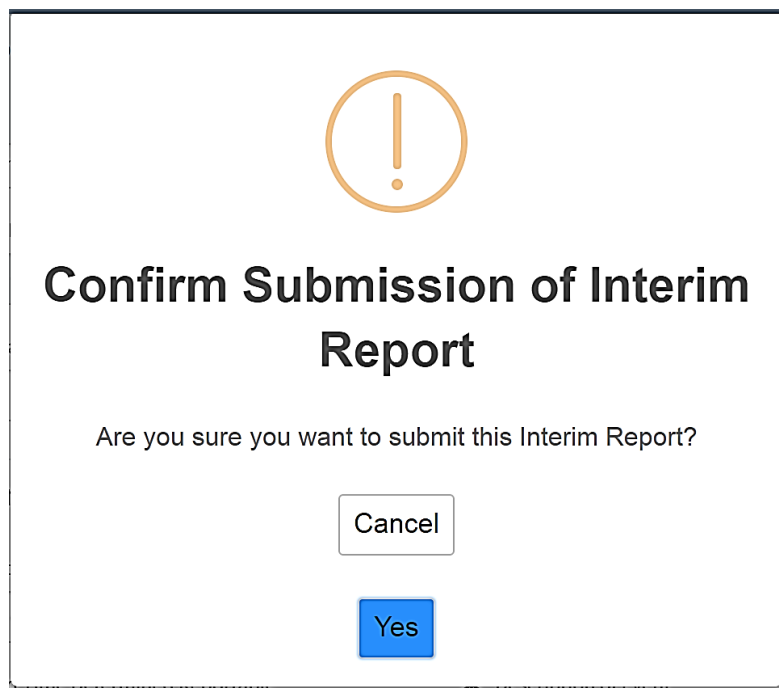
Figure 49. Submission of Interim Report Confirmation

7. If **Submit Final Report** was selected, NORS displays a confirmation page, "Confirm Submission of Final Report". Click on **Yes** to confirm submission (Figure 50).
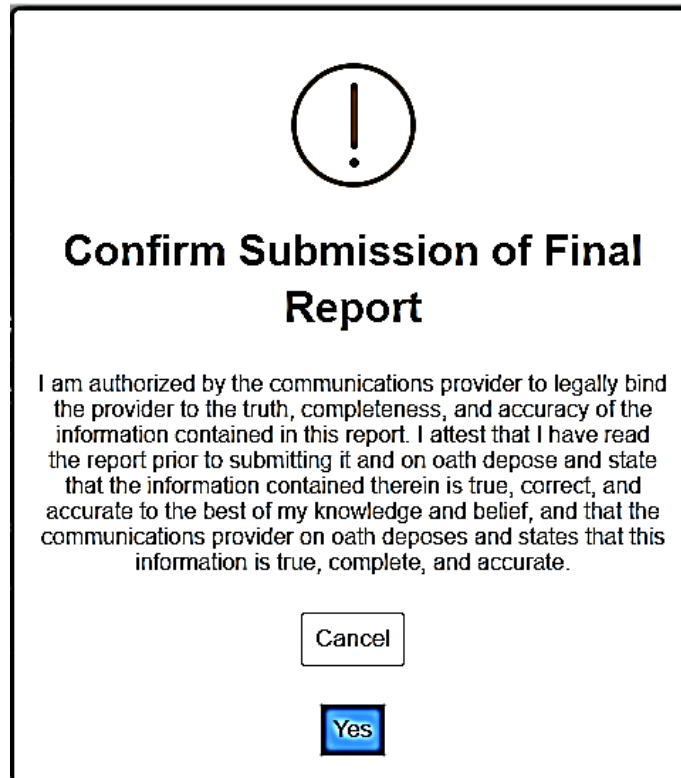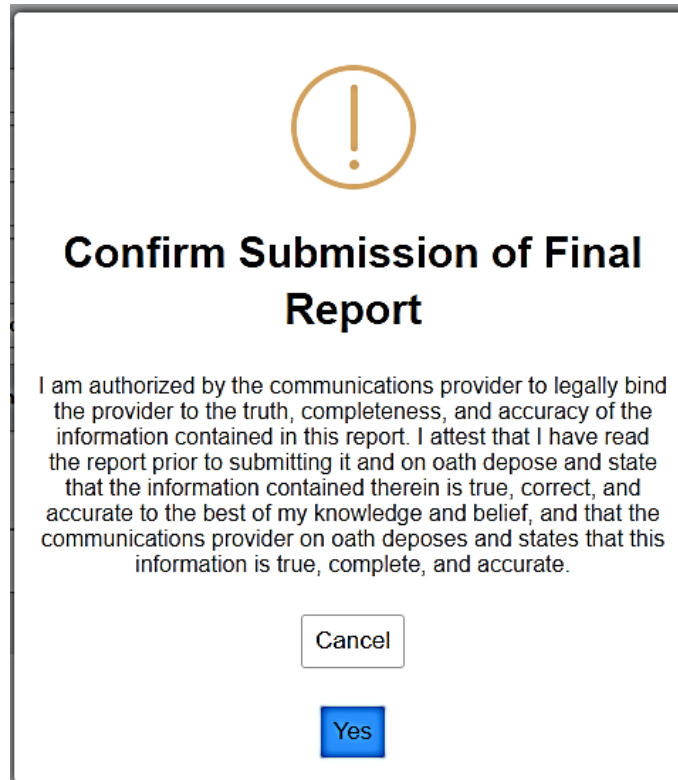
Figure 50. Submission of Final Report Confirmation

8. If **Withdraw Report** was selected, NORS displays the "Withdraw Report" dialogue box (Figure 51).
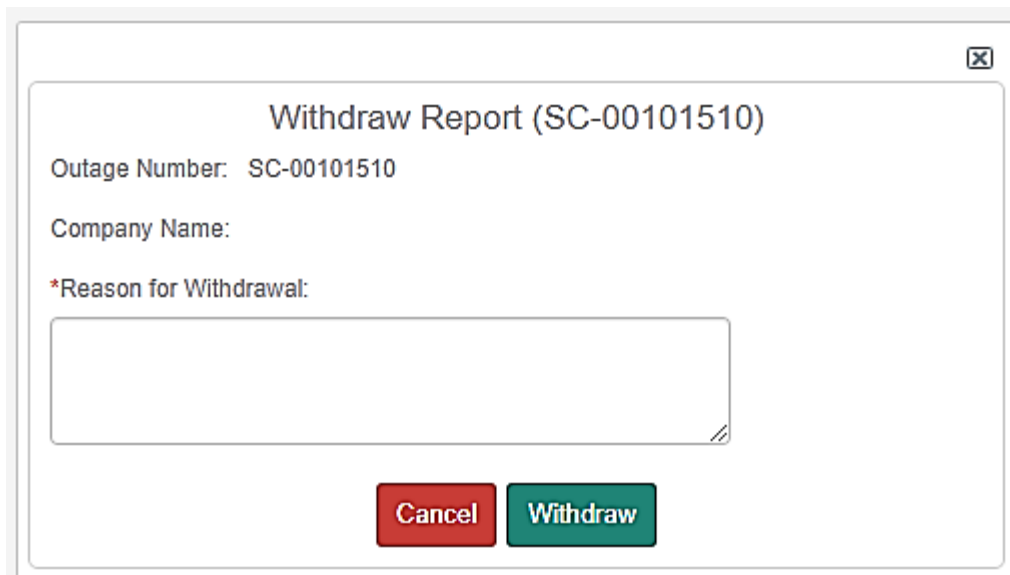
Figure 51. Withdraw Report Screen

9. Enter the reason for withdrawal and select **Withdraw** (Figure 51).

10. Once the request to withdraw a report is submitted, the user is asked to confirm the withdrawal of

report; click on **Yes** in response to "*Are you sure you want to withdraw this report?*"

11. To verify the updated or current report type (i.e., the change to "Interim" or "Final" or "Withdrawn") click on **SC NORS Outages** (Figure 52).
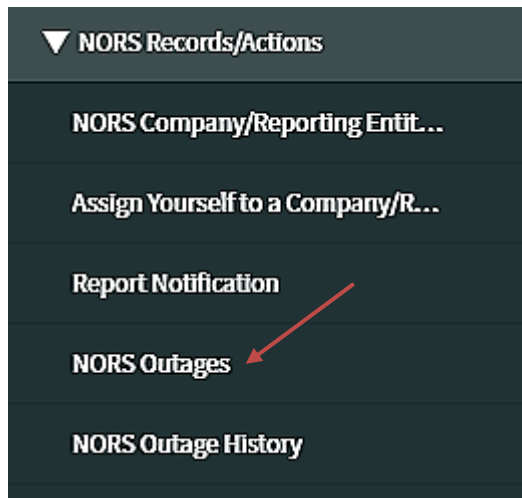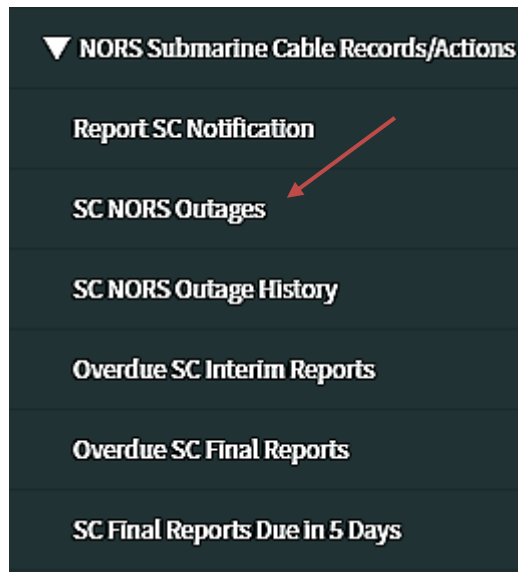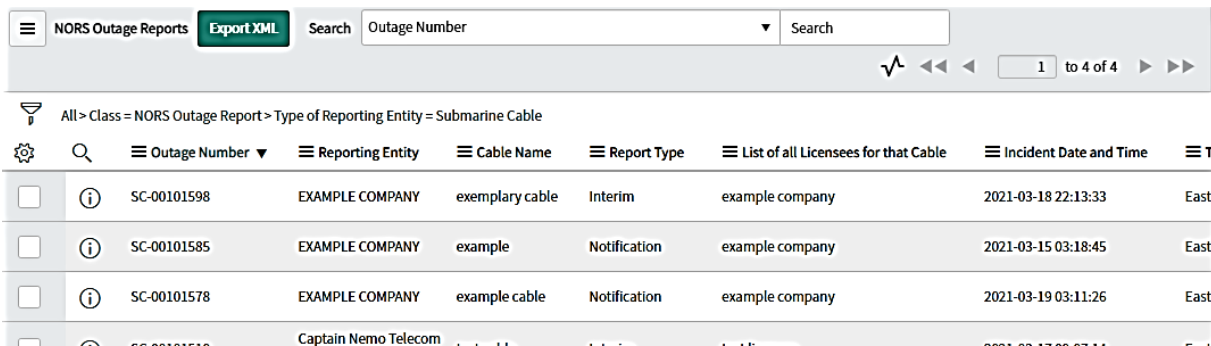

Figure 52. NORS Outages

12. Once **SC NORS Outages** is selected, you can use a filter to find a specific outage. (Use of filters is described below in Section 5.5.) A list of outages satisfying the filter criteria will appear (Figure 53).

Figure 53. Submarine Cable Outage History List

13. NORS Coordinators and the Inputter receive confirmation e-mails from "FCC NORS" verifying the submission of an interim, final, or withdrawn report. Users should ensure e-mail can be accepted from <fcc-outage@fcc.gov> and should check their spam folder if these messages are not being received.

5.4   Request to Reopen a Submarine Cable Outage Report

If you want to revise a NORS Submarine Cable report that has been finalized or withdrawn, it will be necessary to have the report reopened.

1. To reopen a Final or Withdrawn Report, click the **Reopen Report** link (Figure 54, red arrow).
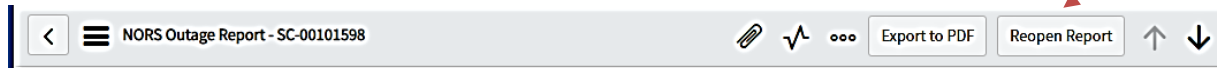
Figure 54. Reopen Report

2. Once the **Reopen Report** link is selected, NORS opens the "Request to Reopen Report" dialogue box (Figure 55).

Figure 55. Request to Reopen Report

3. Enter the company security code and the reason to reopen (Figure 55, starred, mandatory fields) and select **Ok**.

4. Once the request to reopen a report is submitted, NORS displays "Request Submitted" dialogue box; click on OK (Figure 56).
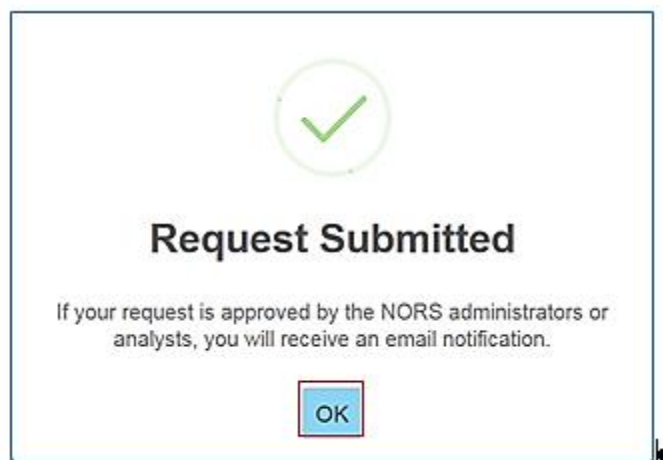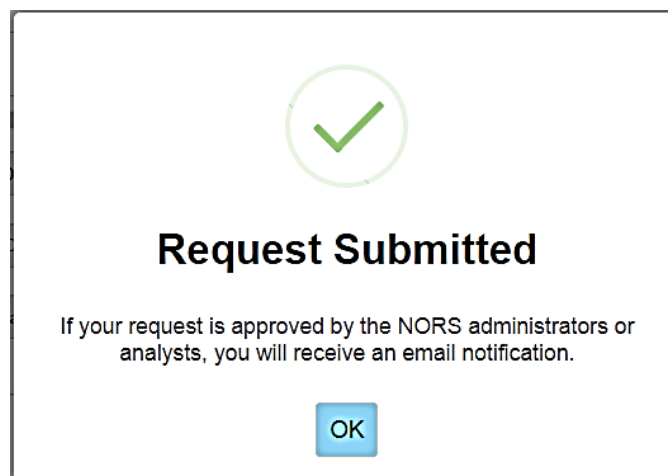

Figure 56. Request to Reopen Acknowledgment

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5. After the request is received, "FCC NORS" will send an email confirming receipt of the request. After the request is approved or rejected, "FCC NORS" will send email confirming the disposition of the request. Requesters should ensure that e-mail can be accepted from <fcc-outage@fcc.gov> and should check their spam folder if these messages are not being received.

5.5   Create a File of Submarine Cable NORS Reports

Grouping of NORS submarine cable outage reports can be made from the SC NORS Outages and the SC NORS Outage History tabs.

1. Click **SC NORS Outages** or **SC NORS Outage History** (Figure 57).
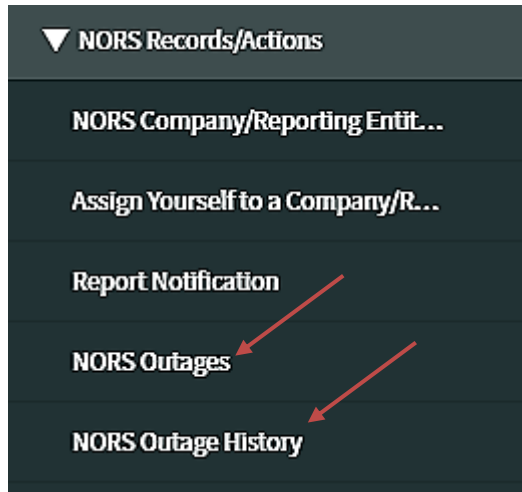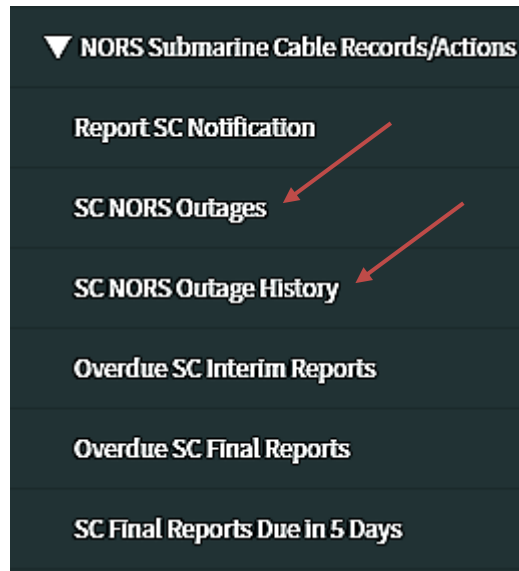

Figure 57. Submarine Cable NORS Outage Reports

2. Filter search results according to options. Enter the criteria of interest. To include additional criteria in the filter, press "AND" or "OR" for your filter query. Click "Run" after you have built the query. (Figure 58, red box and arrows).
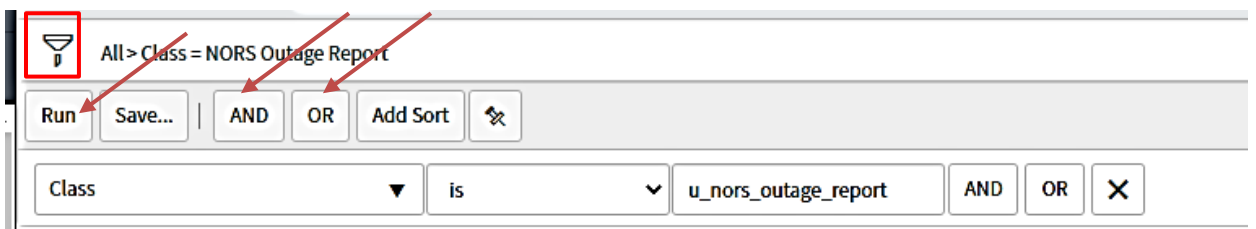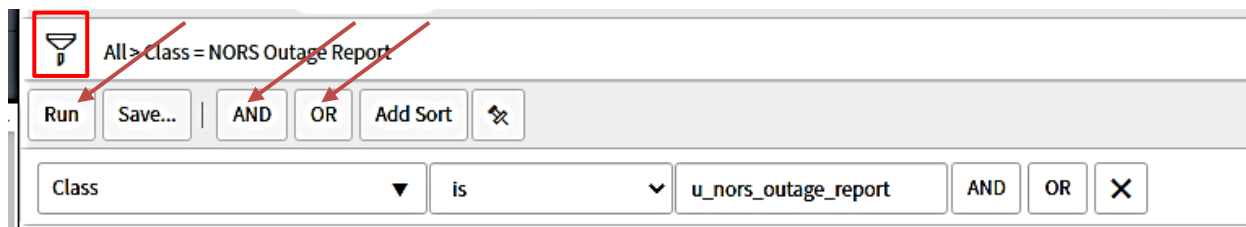

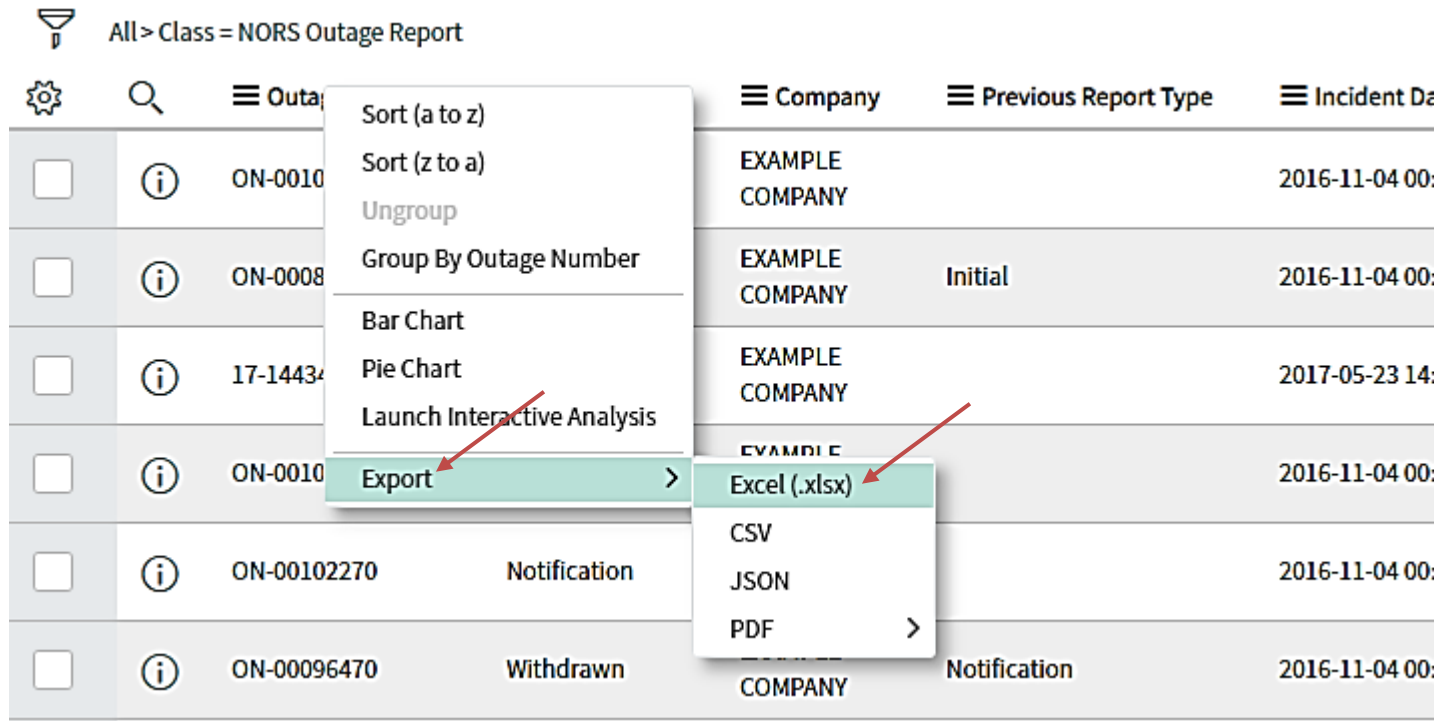*Figure 58. NORS Outage Report Criteria*

3. The user can now view a list of outage reports that satisfy the filter criteria.
4. Right click the label at the top of any column, or the icon to the left of the label; select **Export**, and select the desired format (Excel, CSV, JSON, PDF) for the exported file (Figure 59, red arrows).
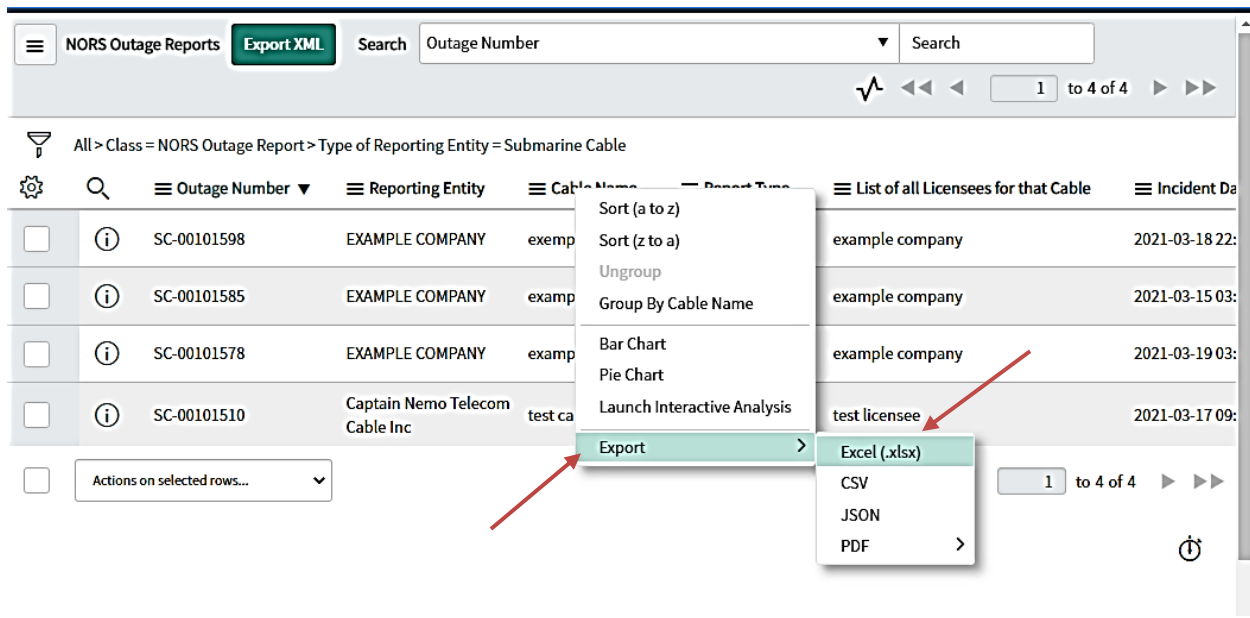
Figure 59. NORS Outage Report Formats
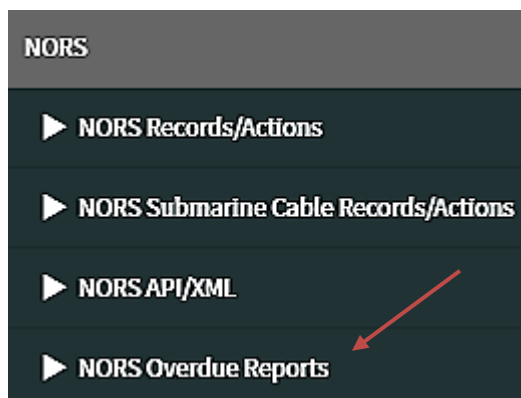
5.6   Obtain List of Overdue Submarine Cable Outage Reports

1. Click on the **Overdue SC Interim Reports**, **Overdue SC Final Reports**, or **SC Final Reports Due in 5 Days** module in the application navigator (Figure 60).
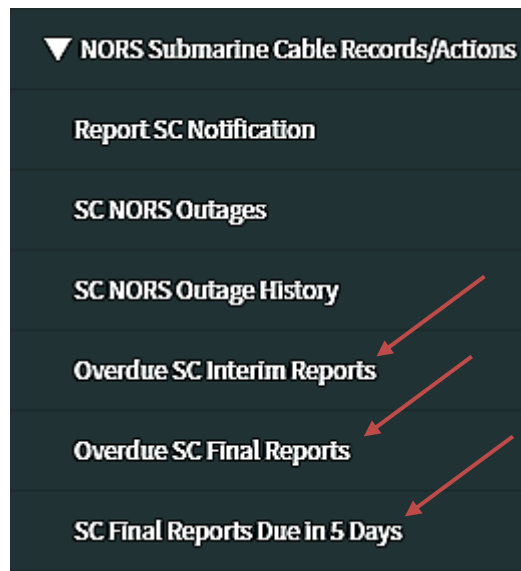
Figure 60. NORS Reports

2. The requested list of reports will be displayed.

6.   Fields on the Notification Form for an Outage Other than a Submarine Cable Outage

Company – This lists the name of the company filing the outage report. It is the name of a company to which the outage inputter has been assigned. The Commission requires providers of wireline, wireless, cable circuit-switched telephony, satellite, paging, and Signaling System 7 (SS7) communications services to submit outage reports regarding disruptions to communication when disruptions meet the reporting thresholds as defined in Part 4 of the Commission's Rules on any facilities provided for a fee to one or more unaffiliated entities by radio, wire, cable, satellite, and/or lightguide: two-way voice and/or paging service, and/or SS7 communications.

Select the company name from the scroll down menu. Typing a letter in the field will highlight the first company in the list with that letter as an initial.

Type of Reporting Entity – Pick from the scroll down menu the type of entity or type of service that your company provides relative to the incident being reported. The choices are:

> Wireline Carrier
> Wireless Carrier
> Cable telephony provider
> Paging provider
> Satellite provider
> SS7 network provider
> E911 service provider
> Facility owner or operator
> VoIP provider

(For submarine cable outage reports, use sections 8 and 9.)

A carrier that provides SS7 service, E911 service and is a facility owner should identify itself as a wireline carrier or E911 service provider, respectively. The designation "SS7 network provider" is intended for companies that only provide SS7 service. Similarly, the designation "E911 service provider" is for companies that only provide all or some portion of E911 service. The designation "Facility owner or operator" is for companies that are not carriers but own, operate and lease facilities for use in telecommunications. A carrier which provides both wireline and wireless services should choose the designation which most closely relates to the incident being reported.

Incident Date and Time - Provide the date and time of the commencement of the outage. NORS will bring up a calendar with today's date highlighted; click on the date to be entered, and type in the time in the space provided below the calendar. Alternatively, the date and time may be entered by typing the date and time in the field using the format "yyyy-mm-dd hh:mm:ss", with the "hh" being consistent with a 24-hour format in the time zone selected for the outage report. See also the discussion of **Time Zone** below.

Time Zone – Pick one of the following from the scroll down menu:

> Alaskan
> Atlantic
> Central
> Eastern
> Greenwich Mean Time (GMT)

Guam
Hawaii-Aleutian
Mountain
Other
Pacific

Puerto Rico and the Virgin Islands are both in the Atlantic time zone. "Other" should be used for other territories, such as American Samoa.

When the filer enters times into the report, the times should be for the time zone selected.

Date and Time Determined Reportable - Date and time at which a company determines that an outage has occurred and meets one or more of the reportable thresholds. NORS will bring up a calendar with today's date highlighted; click on the date to be entered, and type in the time in the space provided below the calendar. Alternatively, the date and time may be entered by typing the date and time in the field using the format "yyyy-mm-dd hh:mm:ss", with the "hh" being consistent with a 24-hour format in the time zone selected for the outage report. See also the discussion of **Time Zone** above.

Reason Reportable – Provide the threshold that was crossed to determine that this outage was reportable. If more than one threshold was crossed, please choose the primary reason. Pick one of the following from the scroll down menu:

Wireline – 900,000 user-minutes
Wireless – 900,000 user-minutes
Cable telephony – 900,000 user-minutes
MSC
E911
Blocked Calls
667 OC3 minutes
OC3-Simplex greater than 4 Days
SS7 - MTP Messages
Airport
Other Special Facilities[2]
Paging
Satellite
Other
VoIP – E911
VoIP – 900,000 user-minutes

E911 Outage – For E911 and VoIP-E911 outages, select one of the following from the scroll down menu:

ALI Only Affected – For wireline carriers when location of the caller could not be provided, but the call could be routed to a public-safety answering point (PSAP).
Phase II Only Affected – For wireless outages when Phase II location information could not be provided, but the call could be routed to a PSAP.
Phase I and Phase II Only Affected – For wireless outages when neither Phase I nor Phase II could be provided, but the call could be routed to a PSAP.

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[2] Enrolled in the Telecommunications Service Priority (TSP) Program at priority Levels 1 and 2.

More than Location Affected – For wireline and wireless carriers when the call could not be routed to the appropriate PSAP.

For outages that are neither E911 nor VoIP-E911, select "E911 Not Affected" from the scroll down menu.

Failure in Other Company- Check "Yes" if the failure occurred in another company's communication network. Otherwise, check "No".

Number of Potentially Affected

Wireline Users Affected – Provide the sum of the number of assigned telephone numbers potentially affected by the outage and the number of administrative numbers potentially affected. If this outage did not affect wireline users, please leave this blank.

> "Assigned numbers" are defined as the telephone numbers working in the Public Switched Telephone Network under an agreement such as a contract or tariff at the request of specific end users or customers for their use and include DID numbers. This excludes numbers that are not yet working but have a service order pending.

> "Administrative numbers" are defined as the telephone numbers used by communications providers to perform internal administrative or operational functions necessary to maintain reasonable quality of service standards.

Wireless Users Affected – Provide the number of potentially affected wireless users. If this outage did not affect wireless users, please leave this blank.

VoIP Users Affected – Provide the number of potentially affected VoIP users. If this outage did not affect VoIP users, please leave this blank. If the outage affected wireless users, include the number of VoLTE users potentially affected in this field. For example, if 20,000 wireless users were affected and 4,000 out of the 20,000 were VoLTE users, then enter 20,000 wireless users affected (as described above) and 4,000 VoIP users affected in the field described here.

Paging Users Affected - Provide the number of assigned telephone numbers for those paging networks in which each individual user is assigned a telephone number. If this outage did not affect paging users, please leave this blank.

Cable Telephone Users Affected - Provide the number of assigned telephone numbers. If this outage did not affect cable telephony users, please leave this blank.

Satellite Users Affected – Provide the number of satellite users affected (if known).

Number of Affected

OC3s – Provide the number of OC3s that were affected by the outage and were out of service for 30 or more minutes. This should be the total capacity of the affected facilities, and not restricted to OC3s that are being utilized.

OC3s restored to service in fewer than 30 minutes should not be included in the count of the number of OC3s affected. For example, if an outage initially took 192 OC3s out of service, but 128 were restored to service in less than 30 minutes, then only 64 were out of service for 30 minutes or longer; consequently, the number of affected OC3s should be recorded as "64".

If some failed OC3s were initially out of service but restored in fewer than 30 minutes, the rapid restoration of those OC3s can be noted in the "Description of Incident" field, but they should not be included in the count of the number of OC3s affected.

Count any failed STS3c as a failed OC3, a failed STS12c as 4 OC3s, etc.

Number of Blocked Calls – Provide the number of blocked calls.

If no calls were blocked, please leave the field blank or enter "0".

If blocked call information is available in only one direction for interoffice facilities that handle traffic in both directions, the total number of blocked calls shall be estimated as twice the number of blocked calls determined for the available direction.

If real time information is not available, providers may provide data for the same day(s) of the week and the same time(s) of day as the outage, covering a time interval not older than 90 days preceding the onset of the outage in an effort to estimate blocked calls. In this case, the number of blocked calls reported should be three times the historic carried load.

If, for whatever reason, real-time and historic carried call load data are unavailable to the provider, even after a detailed investigation, the provider must estimate the carried call load based on data obtained in the time interval between the repair of the outage and the due date for the Final report; this data must cover the same day of the week, the same time of day, and the same duration as the outage. Justification that such data accurately estimates the traffic that would have been carried at the time of the outage must be available on request. In this case, the estimate of the number of blocked calls reported should be 3 times carried load.

The number of blocked calls, if known, should be filled out even if it is not the trigger for an outage being reportable.

Blocked Calls Realtime and Blocked Calls Historic– If the number of Blocked Calls is provided, check whether this number came from real-time data or was based on historic carried loads the same day(s) of the week and the same time(s) of day as the outage.

Number of Lost SS7 MTP Messages - In cases of an SS7 outage and where an SS7 provider cannot directly estimate the number of blocked calls, provide the number of real-time lost SS7 Message Transfer Part (MTP) messages or the number of SS7 MTP messages carried on a historical basis. Historic carried SS7 MTP messages should be for the same day(s) of the week and the same time(s) of day as the outage. The historic information should not be older than 90 days preceding the onset of the outage. If the outage does not affect an SS7 network, please leave this field blank.

Lost SS7 Messages Realtime and Lost SS7 Messages Historic –If the Number of Lost SS7 MTP Messages is provided, check whether this number came from real-time data or was based on historic carried traffic the same day(s) of the week and the same time(s) of day as the outage.

Geographic Area Affected
> **State Affected –** Choose the (primary) state affected by the outage from the scroll down menu. All

50 states along with the District of Columbia, Virgin Islands, and Puerto Rico are listed. Outages affecting more than one state should be listed as "MULTI STATES." If an outage occurred outside the 50 states, the District of Columbia, Virgin Islands, and Puerto Rico, please choose "OTHER: OUTSIDE 50 STATES." Entering a letter in the field will highlight the first state starting with that letter in the list.

City Affected – Provide the (primary) city or town affected or near the affected site. Please do NOT enter the state in this box. This field should not be a county, military base, PSAP, mountain, lake, river, neighborhood, or street.

Description of Incident - Provide a narrative that describes the sequence of events leading up to the incident, the steps taken to try and resolve the incident once it had occurred, and the action(s) that finally resolved the incident. This is for the reader to better understand what happened. Include any factors that may have contributed to the duration of the incident, "quick fix" actions that may have resolved or at least mitigated the immediate problem but were not the final, long-term solution, and any other contributing factors.

Primary Contact

Primary Contact information is prepopulated with information from the profile of the person entering the information. Alternatively, the information in each field can be provided manually.

Name – Provide the full name of the primary contact person.

Phone Number – Provide the phone number of the primary contact person in the format NXX-NXX-XXXX or NPANXXXXXX. That is, 201-444-5656 would mean that the area code or NPA is 201, the central office code is 444, and the line number is 5656.

Extension – Provide an extension number if needed.

Email Address – Provide the e-mail address of the primary contact person.

7. Fields on the Initial and Final Report Forms for Outages Other than Submarine Cable Outages

Note that all of the data previously filled in are carried forward when updating a report. All fields can be changed to reflect new information except the Outage Number and Company,
.
Outage Number – This field is automatically filled in from the Notification. It is the unique identifying number for the report.

Updated At time – Updated at date-times are generated automatically by NORS. They do not appear on the report input forms, but they are displayed at the bottom of the record or report for an individual outage.

Report Type – The report type is selected at the top or bottom of the report input form (it is present at both places) by clicking the "Submit Initial Report" button or the "Submit Final Report" button. The Initial report shall contain all available pertinent information on the outage and shall be submitted in good faith.

The Final report shall contain all pertinent information on the outage, including any information that was not contained in or that has changed from the Initial report.

Company – Lists the name of the company filing the outage report, which is automatically filled in from the Notification. Outage reports must be filed with the FCC by any cable communications provider, wireless service provider, satellite operator, SS7 provider, wireline communications provider, paging provider, E911 service provider, or facility owner and on any facilities which it owns, operates or leases that experiences an outage that meets the reporting thresholds as defined in Part 4 of the Commission's Rules and Regulations.

Type of Reporting Entity – Lists company type. This entry is automatically filled with the information taken from the Notification, but can be changed. The possible entries are:

> Wireline Carrier
> Wireless Carrier
> Cable telephony provider
> Paging provider
> Satellite provider
> SS7 network provider
> E911 service provider
> Facility owner or operator
> VoIP provider

Incident Date and Time - Provide the month, day and year at the commencement of the outage. NORS will bring up a calendar with today's date highlighted; click on the date to be entered, and type in the time in the space provided below the calendar. Alternatively, the date and time may be entered by typing the date and time in the field using the format "yyyy-mm-dd hh:mm:ss", with the "hh" being consistent with a 24-hour format in the time zone selected for the outage report. See also the discussion of **Time Zone** below.

Date and Time Determined Reportable - Date and time at which a company determines that an outage has occurred and meets one or more of the reportable thresholds. NORS will bring up a calendar with the latest date provided highlighted; click on the date to be entered, and type in the time in the space provided below the calendar. Alternatively, the date and time may be entered by typing the date and time in the field using the format "yyyy-mm-dd hh:mm:ss", with the "hh" being consistent with a 24-hour format in the time zone selected for the outage report. See also the discussion of **Time Zone** below.

Time Zone – Pick one of the following from the scroll down menu:

> Alaskan
> Atlantic
> Central
> Eastern
> Greenwich Mean Time (GMT)
> Guam
> Hawaii-Aleutian
> Mountain
> Other
> Pacific

Puerto Rico and the Virgin Islands are both in the Atlantic time zone. "Other" should be used for other territories, such as American Samoa.

When the filer enters times into the report, the times should be for the time zone selected.

Reason Reportable – Provide the threshold that was crossed to determine that this outage was reportable. If more than one threshold was crossed, please choose the primary reason. Pick one of the following from the scroll down menu:

> Wireline – 900,000 user-minutes
> Wireless – 900,000 user-minutes
> Cable telephony – 900,000 user-minutes
> MSC
> E911
> Blocked Calls
> 667 OC3 minutes
> OC3-Simplex greater than 4 Days
> SS7 - MTP Messages
> Airport
> Other Special Facilities
> Paging
> Satellite
> Other
> VoIP – E911
> VoIP – 900,000 user-minutes

Outage Duration - Provide the total elapsed time (hours and minutes) from the commencement of the outage as provided in the preceding data fields until restoration of fu1l service. For example, if the outage duration is 10 hours and 42 minutes, place 10 in the Outage Duration (Hours) field and 42 in the Outage Duration (Minutes) field.

Full service restoration includes the restoration of all services to all customers impacted by the outage, even if the restoral is over temporary facilities. If the customers' locations are destroyed such as by a hurricane, flood, tornado, or wildfire, the duration continues until the reporting carrier is capable of again providing service to those locations. If an outage is ongoing at the time the Final report is filed, report the outage duration hours as"9999" and indicate in the description that the outage was ongoing at the time the final is submitted.

Explanation of Outage Duration (for incidents with partial restoration times) – Describe the stages of restoration if different blocks of users were restored at different times. Often times significant blocks of users may be restored to service prior to full restoration of service. If this is the case, provide information on the number of users in each block restored to service and the elapsed time to partial restoration so that an accurate assessment of the outage impact may be made. In addition, it is important to report when some services, e.g., E911, are restored if different than other services. For outages that last an unusually long time, an explanation should be provided in this field.

Inside Building Indicator – Select "Yes" if the outage occurred inside a building owned, leased, or otherwise controlled by the reporting entity. Otherwise, select "No."

E911 Outage– For E911 and VoIP-E911 outages, select one of the following from the scroll down menu:

> **ALI Only Affected** – for wireline carriers, when location of the caller could not be provided but the call could be routed to a PSAP.
> **Phase II Only Affected** – for wireless outages, when Phase II location information could not be provided but the call could be routed to a PSAP.
> **Phase I and Phase II Only Affected** – for wireless outages, when neither Phase I nor Phase II could be provided but the call could be routed to a PSAP.
> **More than Location Affected** – for wireline and wireless carriers, when the call could not be routed to the appropriate PSAP.

For outages that are neither E911 nor VoIP-E911, select "E911 Not Affected" from the scroll down menu.

Failure in Other Company- Check "Yes" if the failure occurred in another company's network. Otherwise, check "No".

Services Affected
> **Cable Telephone –** Check the box if cable telephony users were affected.
> **Wireless (not paging)** - Check the box if wireless users were affected.
> **VoIP** - Check the box if VoIP users were affected.
> **E911 -** Check the box if E911 service or some aspect of E911 service was affected.
> **Paging -** Check the box if paging users were affected by the outage.
> **Satellite -** Check the box if satellite facilities were affected by the outage.
> **Signaling (SS7) -** Check the box if SS7 service was affected by the outage.
> **Wireline -** Check the box if wireline users were affected by the outage. This includes outages where only intraLATA service or only interLATA service was affected.
> **Special Facilities** - Check the box if any service enrolled in the Telecommunications Service Priority (TSP) Program at priority Levels 1 and/or 2 lost telecommunication service.
> **Other Service**

Number of Potentially Affected
> **Wireline Users Affected –** Provide the sum of the number of assigned telephone numbers potentially affected by the outage and the number of administrative numbers potentially affected. If this outage did not affect wireline users, please leave this blank.

>> "Assigned numbers" are defined as the telephone numbers working in the Public Switched Telephone Network under an agreement such as a contract or tariff at the request of specific end users or customers for their use and include DID numbers. This excludes numbers that are not yet working but have a service order pending.

>> "Administrative numbers" are defined as the telephone numbers used by communications providers to perform internal administrative or operational functions necessary to maintain reasonable quality of service standards.

> **Wireless Users Affected –** Provide the number of potentially affected wireless users.   If this outage did not affect wireless users, please leave this blank.

> **VoIP Users Affected –** Provide the number of potentially affected VoIP users. If this outage did not affect VoIP users, please leave this blank.

Paging Users Affected - Provide the number of assigned telephone numbers for those paging networks in which each individual user is assigned a telephone number. If this outage did not affect paging users, please leave this blank.

Cable Telephone Users Affected - Provide the number of assigned telephone numbers. If this outage did not affect cable telephony users, please leave this blank.

Satellite Users Affected – Provide the number of satellite users affected (if known).

Number of Affected

OC3s – Provide the number of previously operating OC3s that were affected by the outage and were out of service for 30 or more minutes, regardless of the services carried on the OC3s or the utilization of the OC3s.

OC3s restored to service in fewer than 30 minutes should not be included in the count of the number of OC3s affected. For example, if an outage initially took 192 OC3s out of service, but 128 were restored to service in less than 30 minutes, then only 64 were out of service for 30 minutes or longer; consequently, the number of affected OC3s should be recorded as "64".

If some failed OC3s were initially knocked out of service but restored in fewer than 30 minutes, the rapid restoration of those OC3s can be noted in the "Description of Incident" field, but they should not be included in the count of the number of OC3s affected.

Count any failed STS3c as a failed OC3, a failed STS12c as 4 OC3s, etc.

Number of Blocked Calls – Provide the number of blocked calls.

If no calls were blocked, please leave the field blank or enter "0".

If blocked call information is available in only one direction for interoffice facilities which handle traffic in both directions, the total number of blocked calls shall be estimated as twice the number of blocked calls determined for the available direction.

If real time information is not available, providers may provide data for the same day(s) of the week and the same time(s) of day as the outage, covering a time interval not older than 90 days preceding the onset of the outage in an effort to estimate blocked calls. In this case, the number of blocked calls reported should be 3 times the historic carried load.

If, for whatever reason, real-time and historic carried call load data are unavailable to the provider, even after a detailed investigation, the provider must estimate the carried call load based on data obtained in the time interval between the repair of the outage and the due date for the Final report; this data must cover the same day of the week, the same time of day, and the same duration as the outage. Justification that such data accurately estimates the traffic that would have been carried at the time of the outage must be available on request. In this case, the estimate of the number of blocked calls reported should be 3 times carried load.

The number of blocked calls, if known, must be filled out even if it is not the trigger for an outage being reportable.

Blocked Calls Realtime and Blocked Calls Historic– If the number of Blocked Calls is provided, check whether this number came from real-time data or was based on historic carried loads the same day(s) of the week and the same time(s) of day as the outage.

Number of Lost SS7 MTP Messages - In cases of an SS7 outage and where an SS7 provider cannot directly estimate the number of blocked calls, provide the number of real-time lost SS7 MTP messages or the number SS7 MTP messages carried on a historical basis. Historic carried SS7 MTP messages should be for the same day(s) of the week and the same time(s) of day as the outage. The historic information should not be older than 90 days preceding the onset of the outage. If the outage does not affect an SS7 network, please leave this field blank.

Lost SS7 Messages Realtime and Lost SS7 Messages Historic –If the Number of Lost SS7 MTP Messages is provided, check whether this number came from real-time data or was based on historic carried traffic the same day(s) of the week and the same time(s) of day as the outage.

Mobile Switching Center (MSC) Failed – Check "Yes" if the outage included an MSC failure. Check "No" if the outage did not include an MSC failure. Check "N/A" if your network does not have MSCs.

Geographic Area Affected

State Affected – Choose the (primary) state affected by the outage from the scroll down menu. All 50 states along with the District of Columbia, Virgin Islands, and Puerto Rico are listed. Outages affecting major parts of more than one state should be listed as "MULTI STATES." If an outage occurred outside the 50 states, the District of Columbia, Virgin Islands, and Puerto Rico, please choose "OTHER: OUTSIDE 50 STATES." Entering a letter in the field will highlight the first state starting with that letter in the list.

City Affected – Provide the (primary) city affected. Please do NOT enter the state in this box. This field should not be a county, military base, PSAP, mountain, lake, river, neighborhood, or street.

More Complete Description of Geographic Area **Affected** – Provide a more complete description of the geographical area of the outage. In particular, for "MULTI STATES" outages, it is important to list the states affected. For outages affecting more than one community, it is important to describe actual communities affected. Include CLLI codes if applicable.

Description of Incident - Provide a narrative that describes the sequence of events leading up to the incident, the steps taken to try and resolve the incident once it had occurred, and the action(s) that finally resolved the incident. This is for the reader to better understand what happened. Include any factors that may have contributed to the duration of the incident, "quick fix" actions that may have resolved or at least mitigated the immediate problem but were not the final, long-term solution, and any other contributing factors. The description should be sufficiently detailed to allow the reader to reach the same conclusions as the writer as to the Direct Cause and Root Cause of the incident.

Description of the Cause(s) of the Outage – Provide a text description of all the causes of the outage. This text should be in the inputter's own words and should not use the words in the pull-down menus for Direct Cause or Root Cause.

Direct Cause: The direct cause is the immediate event that results in an outage – Scroll down the menu and choose the direct cause that is the most accurate. The direct cause is the event, action, or procedure that triggered the outage. Section 11 provides a complete description of each of the direct causes. For

example, a cable cut could be the triggering event or direct cause of an outage whose root cause is lack of diversity.

Root Cause: The root cause is the underlying reason why the outage occurred or why the outage was reportable – Scroll down the menu and choose the root cause that best fits. Root Cause is the key problem which once identified and corrected will prevent the same or a similar problem from recurring. With today's technology, two or more problems may be closely linked and require detailed investigation. However, in any single incident there should be only one primary cause - the Root Cause. Section 11 provides a complete description of each root cause. For example, a cable cut from improper marking could be the triggering event or direct cause but the real cause (root cause) may be lack of diversity.

Contributing Factors – Scroll down the menu and choose the contributing factors that best fit, if applicable. Contributing factors are problems or causes that are closely linked to the outage. Often if a contributing factor had been addressed beforehand, the outage could have been prevented or the effect of the outage would have been reduced or eliminated. The form allows two contributing factors, for which there are complete descriptions in Section 11.

Lack of Diversity– Check "Yes" if lack of diversity contributed to or caused the outage. Otherwise, check "No." If Best Practices related to diversity are discussed in any of the Best Practice fields, or if the lack of diversity is listed as a root cause or contributing factor to the outage, then this field should be marked "Yes". In general, determine whether engineering standards for diversity are being followed.

Malicious Activity – Indicate whether you believe that malicious activity might be involved in the outage. Malicious activity could be the product of terrorists.

If yes - please explain Malicious Activity – Provide an explanation of why you believe the activity is malicious or what is suspicious about the activity if "Yes - Cyber" or "Yes - Physical" is selected in the Malicious Activity field.

Name and Type of Failed Equipment - Provide the vendor name and the specific equipment (including software release if applicable) involved in the outage. For example, if a relay in a power plant fails that subsequently causes a switch to go out of service due to lack of power, then report the make and model of the relay, not the power plant or switch.

Specific Part of Network Involved – Provide the part of the network involved with the incident. Examples are local switch, tandem switch, signaling network, central office power plant, digital cross-connect system, outside plant cable, ALI database, etc.

Method(s) Used to Restore Service - Provide a complete, chronological narrative of the methods used to restore service, both "quick fix" and final.

Was Telecommunications Service Priority Involved in Service Restoration? – Check "Yes" if TSP was involved during service restoration. Otherwise, check "No."

Steps Taken to Prevent Recurrence – Provide the steps already taken and to be taken to prevent reoccurrence. Typically, the corrective actions are identified through a Root Cause Analysis of the incident and the steps for prevention can be at both this location and throughout the network(s) if appropriate. If a time frame for implementation exists, it should be provided. If no further action is required or planned, the service provider should so indicate.

Applicable Best Practices that might have prevented the Outage or reduced its effects – Provide the number(s) of the Best Practices that could have prevented the outage or reduced its effects. The Network Reliability and Interoperability Council (NRIC) and Communications Security, Reliability, and Interoperability Council (CSRIC) have developed a list of Best Practices. They can be accessed via https://opendata.fcc.gov/Public-Safety/CSRIC-Best-Practices/qb45-rw2t/data . You can find relevant Best Practices by using keywords. Alternatively, Best Practices can also be sourced from the ATIS Best Practices website: https://bp.atis.org/ .

Best Practices used to mitigate effects of Outage - Provide the number(s) and also possibly descriptions of the most important Best Practices that were actually used to lessen the effects of the outage. These chosen Best Practices helped shorten the outage, reduced the restoration times, prevented the outage from affecting more customers, and/or reduced the effects on customers (e.g., ensured that E911 was not affected). If none were used, please leave blank. Best Practices can be sourced from https://opendata.fcc.gov/Public-Safety/CSRIC-Best-Practices/qb45-rw2t/data or https://bp.atis.org/ .

Analysis of Best Practice – Provide an evaluation of the relevance, applicability and usefulness of the current Best Practices for the outage. If a new Best Practice is needed or an existing Best Practice needs to be modified, please indicate.

Remarks – Provide any additional information that you believe is relevant, but did not fit anyplace else on the form.

Primary Contact
Primary Contact information is prepopulated with information from the latest report. Alternatively, the information can be provided manually in each field.

Name – Provide the full name of the primary contact person.

Phone Number – Provide the phone number of the primary contact person in the format NPA-NXX-XXXX or NPANXXXXXX. That is, 201-444-5656 would mean that the area code or NPA is 201, the central office code is 444, and the line number is 5656.

Extension – Provide an extension number if needed.

U.S. Postal Service Address – Optional. May provide the address of the primary contact person using the fields Address Line 1, Address Line 2, and Address Line 3.

Email Address – Provide the e-mail address of the primary contact person.

Secondary Contact
Secondary Contact information can be added by clicking the search icon on the right of the field "Select User" and select the appropriate user name to prepopulate the secondary contact information and. Alternatively, the information can be provided manually in each field.

Name – Provide the full name of the secondary contact person.

Phone Number – Provide the phone number of the secondary contact person in the format NPA-NXX-XXXX or NPANXXXXXX. That is, 201-444-5656 would mean that the area code or NPA is 201, the central office code is 444, and the line number is 5656.

Extension – Provide an extension number if needed.

U.S. Postal Service Address – Optional. May provide the address of the secondary contact person using the fields Address Line 1, Address Line 2, and Address Line 3.

Email Address – Provide the e-mail address of the secondary contact person.

8.   Fields on the Notification Form for a Submarine Cable Outage

Reporting Entity – This gives the name of the reporting entity filing the outage report. The Commission requires submarine cable licensees to submit outage reports regarding disruptions to communication when disruptions meet the reporting thresholds as defined in Section 4.15 of the Commission's Rules. For cables with multiple licensees, the licensees may jointly designate a single "responsible licensee", and that licensee would become the "reporting entity" for outages of the affected submarine cable. For a cable with only one licensee, that licensee would be the "reporting entity" for NORS purposes.

The reporting entity name must be the name of a reporting entity to which the outage inputter has been assigned. Inputter should select the name from the scroll down menu. Typing a letter in the field will highlight the first company starting with that letter in the list.

Type of Reporting Entity – For a submarine cable outage report, the type of reporting entity will always be Submarine Cable Reporting Entity.

Cable Name – As given in the license.

List of All Licensees for that Cable – As given in the license.

Incident Date and Time - Provide the date and time of the commencement of the outage. NORS will bring up a calendar with today's date highlighted; click on the date to be entered, and type in the time in the space provided below the calendar. Alternatively, the date and time may be entered by typing the date and time in the field using the format "yyyy-mm-dd hh:mm:ss", with the "hh" being consistent with a 24-hour format in Greenwich Mean Time.

Time Zone – In a submarine cable outage report, all times should be entered as Greenwich Mean Time (GMT).

Date and Time Determined Reportable - Date and time at which a company determines that an outage has occurred and meets one or more of the reportable thresholds. NORS will bring up a calendar with today's date highlighted; click on the date to be entered, and type in the time in the space provided below the calendar. Alternatively, the date and time may be entered by typing the date and time in the field using the format "yyyy-mm-dd hh:mm:ss", with the "hh" being consistent with a 24-hour format in GMT.

Description of Event - Provide a narrative that describes the sequence of events leading up to the incident, the steps taken to try and resolve the incident once it had occurred, and the action(s) that finally resolved the incident. This is for the reader to better understand what happened. Include any factors that may have contributed to the duration of the incident, "quick fix" actions that may have resolved or at least mitigated the immediate problem but were not the final, long-term solution, and any other contributing factors.

Description of Causes– Provide a text description of all the causes of the outage.

Was Event Related to Planned Maintenance? – Indicate whether the reportable event resulted directly or indirectly from planned maintenance.

Location of Cable Landing Station Closest to Failure Site – Provide the country (Country of Cable Landing Station Closest to Failure Site) and city (City of Cable Landing Station Closest to Failure Site) in which the cable landing closest to the point of failure is located.

Location of the Event – Provide the location of the cable break or other failed unit. There are two formats in which this information may be provided.
> **Miles and Direction**
>> **Miles** – Provide the distance in nautical miles from the nearest landing.
>> **Direction** – Provide the direction of the failure site relative to the nearest landing. For example, if the break is located northwest of the nearest landing, enter "northwest" in this field.
> **Latitude and Longitude**
>> **Latitude** – Provide the latitude of the point of failure. This should be specified in degrees and fractions of a degree, rather than degrees, minutes, seconds, and fractions of a second. This number should be followed by N or S, depending on whether it is a location North or South of the equator. The number should be accurate to one hundredth of a degree.
>> **Longitude** – Provide the longitude of the point of failure. This should be specified in degrees and fractions of a degree, rather than degrees, minutes, seconds, and fractions of a second. This number should be followed by E or W, depending on whether it is a location East of West of the Greenwich Meridian. The number should be accurate to one hundredth of a degree.

Contact Information

Contact information is prepopulated with information from the profile of the person entering the information. Alternatively, the information in each field can be provided manually.

Contact Name – Provide the full name of the primary contact person.

Contact Email Address - Provide the e-mail address of the contact person

Contact Telephone Number – Provide the phone number of the primary contact person in the format NXX-NXX-XXXX or NPANXXXXXX. That is, 201-444-5656 would mean that the area code or NPA is 201, the central office code is 444, and the line number is 5656.

9.   Fields on the Interim and Final Report Forms for Submarine Cable Outages

Note that all of the data previously filled in are carried forward when updating a report. All fields can be changed to reflect new information except the Outage Number and Company.

Reporting Entity – Gives the name of the reporting entity filing the outage report, which is automatically filled in from the Notification. Submarine cable outage reports must be filed with the FCC by the cable licensee for any cable that experiences an outage that meets the reporting thresholds as defined in Section 4.15 of the Commission's Rules and Regulations. For cables with multiple licensees, the licensees may

jointly designate a single "responsible licensee", and that licensee would become the "reporting entity" for outages of the affected submarine cable.

Type of Reporting Entity– For a submarine cable outage report, the type of reporting entity will always be Submarine Cable Reporting Entity.

Outage Number –This field is automatically filled in from the Notification. It is the unique identifying number for the report.

Report Type – The type of report being submitted is specified at the top or bottom of the report input form (it is present at both places) by clicking the "Submit Interim Report" button or the "Submit Final Report" button. The Interim report shall contain all available pertinent information on the outage, including at a minimum information for all mandatory fields in the report template, and shall be submitted in good faith. The Final report shall contain all pertinent information on the outage, including at a minimum information for all mandatory fields in the report template, and including any information that was not contained in or that has changed from the Interim report.

Cable Name – As given in the license.

List of All Licensees for that Cable – As given in the license.

Incident Date and Time - Provide the month, day and year at the commencement of the outage. NORS will bring up a calendar with today's date highlighted; click on the date to be entered, and type in the time in the space provided below the calendar. Alternatively, the date and time may be entered by typing the date and time in the field using the format "yyyy-mm-dd hh:mm:ss", with the "hh" being consistent with a 24-hour format in Greenwich Mean Time.

Date and Time Determined Reportable - Date and time at which a company determines that an outage has occurred and meets one or more of the reportable thresholds. NORS will bring up a calendar with the latest date provided highlighted; click on the date to be entered, and type in the time in the space provided below the calendar. Alternatively, the date and time may be entered by typing the date and time in the field using the format "yyyy-mm-dd hh:mm:ss", with the "hh" being consistent with a 24-hour format in Greenwich Mean Time.

Time Zone – In a submarine cable outage report, all times should be entered as Greenwich Mean Time (GMT).

Outage Duration - Provide the total elapsed time (days and hours) from the commencement of the outage as provided in the preceding data fields until restoration of fu1l service. For example, if the outage duration is 10 days and 22 hours, place 10 in the Outage Duration (Days) field and 22 in the Outage Duration (Hours) field.

Full service restoration includes the restoration of all services to all customers impacted by the outage, even if the restoral is over temporary facilities. If the customers' locations are destroyed such as by a hurricane, flood, tornado, or wildfire, the duration continues until the reporting carrier is capable of again providing service to those locations. If an outage is ongoing at the time the Final report is filed, report the outage duration hours as"9999" and also indicate in the description that the outage was ongoing at the time the final is submitted.

Description of Event - Provide a narrative that describes the sequence of events leading up to the incident, the steps taken to try and resolve the incident once it had occurred, and the action(s) that finally resolved the incident. This is for the reader to better understand what happened. Include any factors that may have contributed to the duration of the incident, "quick fix" actions that may have resolved or at least mitigated the immediate problem but were not the final, long-term solution, and any other contributing factors.

Description of Causes – Provide a text description of all the causes of the outage.

Was Event Related to Planned Maintenance? – Indicate whether the reportable event resulted directly or indirectly from planned maintenance.

Location of Cable Landing Station Closest to Failure Site – Provide the country (Country of Cable Landing Station Closest to Failure Site) and city (City of Cable Landing Station Closest to Failure Site) in which the cable landing closest to the point of failure is located.

Location of the Event – Provide the location of the cable break or other failed unit. There are two formats in which this information may be provided.
> **Miles and Direction**
> > **Miles** – Provide the distance in nautical miles from the nearest landing.
> > **Direction** – Provide the direction of the failure site relative to the nearest landing. For example, if the break is located northwest of the nearest landing, enter "northwest" in this field.
> **Latitude and Longitude**
> > **Latitude** – Provide the latitude of the point of failure. This should be specified in degrees and fractions of a degree, rather than degrees, minutes, seconds, and fractions of a second. This number should be followed by N or S, depending on whether it is a location North or South of the equator. The number should be accurate to one hundredth of a degree.
> > **Longitude** – Provide the longitude of the point of failure. This should be specified in degrees and fractions of a degree, rather than degrees, minutes, seconds, and fractions of a second. This number should be followed by E or W, depending on whether it is a location East of West of the Greenwich Meridian. The number should be accurate to one hundredth of a degree.

Date and Time when Plan of Work was Received
Estimate of when the Cable is Scheduled to be Repaired
Arrival Date and Time of Repair ship, if any
Date and Time of Repair
> For the fields above, NORS will bring up a calendar with the latest date provided highlighted; click on the date to be entered, and type in the time in the space provided below the calendar. Alternatively, the date and time may be entered by typing the date and time in the field using the format "yyyy-mm-dd hh:mm:ss"
>
> If any of the field (except Date and Time of Repair) is not applicable, filer can enter N/A, which will be changed to 0001-01-01 00:00:00 to indicate the field is not applicable.

Restoration method - Provide a complete, chronological narrative of the methods used to restore service, both "quick fix" and final.

Steps Taken to Prevent Recurrence – Provide the steps already taken and to be taken to prevent reoccurrence. Typically, the corrective actions are identified through a Root Cause Analysis of the incident and the steps for prevention can be at both this location and throughout the network(s) if appropriate. If a time frame for implementation exists, it should be provided. If no further action is required or planned, the service provider should so indicate.

Remarks – Provide any additional information that you believe is relevant, but did not fit anyplace else on the form.

Contact Information

Contact information is prepopulated with information from the profile of the person entering the information. Alternatively, the information in each field can be provided manually.

Contact Name – Provide the full name of the primary contact person.

Contact Email Address - Provide the e-mail address of the contact person

Contact Telephone Number – Provide the phone number of the primary contact person in the format NXX-NXX-XXXX or NPANXXXXXX. That is, 201-444-5656 would mean that the area code or NPA is 201, the central office code is 444, and the line number is 5656.

Updated At time: Updated at date-times are generated automatically by NORS. They do not appear on the report input forms, but they are displayed at the bottom of the record or report for an individual outage.

10.   Fields on the Withdraw Report Dialog Box

Outage Number– This field is the unique identifying number for the report. It is automatically provided from the latest report submission.

Company or Reporting Entity Name – The name of the company or reporting entity filing the outage report, which is automatically provided from the latest report submission.

Reason for Withdrawal – State the reason that the report is being withdrawn.

11.   Descriptions of Root Cause, Direct Cause and Contributing Factors for Outages Other than Submarine Cable Outages

Cable Damage
>   **Cable Unlocated**
>   Prior notification of action was provided by the excavator, but the facility owner or locating company failed to establish the presence of a cable, which was then eventually damaged.
>   **Digging Error**
>   Excavator error during digging (contractor provided accurate notification, route was accurately located and marked, and cable was buried at a proper depth with sufficient clearance from other sub-surface structures).
>   **Inaccurate/ Incomplete Cable Locate**

The cable's presence was determined, but its location was inaccurately and/or partially identified.

Inadequate/No Notification

Excavator failed to provide sufficient or any notification prior to digging, did not accurately describe the location of the digging work to be performed, or did not wait the required time for locate completion.

Other

Shallow Cable

The cable was at too shallow a depth (notification was adequate, locate was accurate, excavator followed standard procedures).

Cable Damage/Malfunction

Aerial/Non-Buried

Aerial/non-buried cable was damaged or ceased to function (e.g., power transformer fire, tension on span, automobile collision, etc.).

Cable Malfunction

Cable ceased to function (e.g., loss of transmission due to aging, connector failure, etc.).

Design - Firmware

Ineffective Fault Recovery or Re-Initialization Action

Failure to reset/restore following general/system restoral/initialization.

Insufficient Software State Indications

Failure to communicate or display out-of-service firmware states; failure to identify, communicate or display indolent or "sleepy" firmware states.

Other

Design - Hardware

Inadequate Grounding Strategy

Insufficient component grounding design; duplex components/systems sharing common power feeds/fusing.

Other

Poor Backplane or Pin Arrangement

Non-standard/confusing pin arrangements or pin numbering schemes; insufficient room or clearance between pins; backplane/pin crowding.

Poor card/frame mechanisms (latches, slots, jacks, etc.)

Mechanical/physical design problems.

Design – Software

Faulty Software Load - Office Data

Inaccurate/mismatched office configuration data used/applied; wrong/defective office load supplied.

Faulty Software Load - Program Data

Bad program code/instructions; logical errors/incompatibility between features/sets; software quality control failure; wrong/defective program load supplied; software vulnerability to virus infection.

Inadequate Defensive Checks

Changes to critical or protected memory were allowed without system challenge; contradictory or ambiguous system input commands were interpreted/responded to without system challenge. Failure of system to recognize or communicate query/warning in response to commands with obvious major system/network impact.

Ineffective Fault Recovery or Re-initialization Action

Simple, single-point failure resulting in total system outage; failure of system diagnostics resulting from the removal of a good unit with restoral of faulty mate; failure to switch/protect the switch to standby/spare/mate component(s).

Other

Diversity Failure

> **External**
>
> Failure to provide or maintain the diversity of links or circuits among external network components which results in a single-point-of-failure configuration.
>
> **Internal (Other)**
>
> Failure to provide or maintain diversity of equipment internal to a building. This is excluding power equipment and timing equipment.
>
> **Links**
>
> SS7 communication paths were not physically and logically diverse.
>
> **Power**
>
> Failure to diversify links, circuits, or equipment among redundant power system components, including AC rectifiers/chargers, battery power plants, DC distribution facilities, etc.
>
> **Timing Equipment**
>
> Failure to diversify critical equipment across timing supplies (e.g., BITS clocks).

Environment – External (for limited use when applicable root causes caused by a service provider or vendor cannot be identified; it can also be listed as a contributing factor).

> **Animal Damage**
>
> Component destruction associated with damage caused by animals (e.g., squirrel/rodent chewing of cables, insect infestation, bird droppings, bird nests, etc.).
>
> **Earthquake**
>
> Component destruction or fault associated directly or indirectly with seismic shock. However, if damage was the result of inadequate earthquake bracing, consider the root cause to be Design - Hardware.
>
> **Fire**
>
> Component destruction or fault associated with a fire occurring/starting outside the service provider plant. This includes brush fires, pole fires, etc.
>
> **Flood**
>
> **Ice/Storm**
>
> **Lightning/Transient Voltage**
>
> Component destruction or fault associated with surges and over-voltages caused by (electrical) atmospheric disturbances.
>
> **Other**
>
> **Storm - Water/Ice**
>
> Component destruction or fault associated with fog, rain, hail, sleet, snow, or the accumulation of water/ice (flooding, collapse under weight of snow, etc.).
>
> **Storm - Wind/Trees**
>
> Component destruction or fault associated with wind-borne debris or falling trees/limbs.
>
> **Vandalism/Theft**
>
> Component loss, destruction, or fault associated with larceny, mischief, or other malicious acts.
>
> **Vehicular Accident**
>
> Component destruction or fault associated with vehicle (car, truck, train, etc.) collision.

Environment (Internal)

Cable Pressurization Failure

Component destruction or fault associated with cable damage resulting from cable pressurization failure.

Dirt, Dust Contamination

Component loss or fault associated with dirt or dust, typically resulting in component overheating, or loss of connectivity.

Environmental System Failure (heat/humidity)

Component loss or fault associated with extreme temperature, rapid temperature changes, or high humidity due to loss/malfunction of environmental control(s). If the failure was the result of inadequate/lack of response to (alarmed/un-alarmed) environmental failures, or due to incorrect manual control of environmental systems, consider the root cause to be a Procedural failure.

Fire Suppression (water, chemicals) Damage

Component loss or fault associated with corrosion (electrolytic or other) caused by fire suppression activities; this root cause assumes that no substantial failure was directly associated with the smoke/fire that triggered suppression.

Fire, Arcing, Smoke Damage

Component loss or fault associated with damage directly related to central office or equipment fires (open flame or smoldering), corrosive smoke emissions, or electrical arcing (whether or not ignition of surrounding material occurs).

Manhole/Cable Vault Leak

Component destruction or fault associated with water entering manholes, cable vaults, CEVs, etc.

Other

Roof/Air Conditioning Leak

Component destruction or fault associated with water damage (direct or electrolytic) caused by roof or environmental systems leaks into/in central office environment.

Hardware Failure

Circuit Pack/Card Failure-Other

Circuit pack or card, other than within a processor or memory unit, failed (e.g., component failure, pin edge connector failure, firmware failure, etc.).

Circuit Pack/Card Failure-Processor

Circuit pack or card within the processor failed (e.g., component failure, pin edge connector failure , firmware failure, etc.).

Memory Unit Failure

Other

Passive Devices

Equipment, hardware or devices that contain no electronics (e.g., demarcation points, cross connect panels, splitters, etc.).

Peripheral Unit Failure

Processor Community Failure

Self-contained Device Failure

Equipment or hardware that contains electronics, but does not contain replaceable components.

Shelf/Slot Failure

Failure of entire equipment shelf/chassis, connectors, or backplane (e.g., physical damage, corrosion, contamination, wear, etc.).

Software Storage Media Failure

Hardware failure resulting in corruption of office data, program data, routing data, etc.

Insufficient Data

Insufficient Data (no additional modifier)

There is not enough information from the failure report (and subsequent investigation, if any) to determine cause(s) of failure.

Cleared While Testing

Service restored before the cause could be determined.

Non-Service Provider Personnel

Failure is caused by non-service provider personnel (e.g., contractors, building maintenance personnel, tenant of telco hotel, etc.).

Outside Owned Network

Failure occurred in another company's network (e.g., leased transport capacity, contracted signaling service, etc.).

Under Investigation

Root cause analysis pending.

Other/Unknown

The cause of the outage cannot be determined, or the cause does not match any of the classifications above. Excludes cases where outage data were insufficient or missing, or where root cause is still under investigation. When root cause cannot be proven, it is usually still possible to determine the probable cause, which falls under the heading "Unknown." When classifications provided do not match the cause, the approximate match is preferred to be "Other."

Planned Maintenance

To Upgrade the System

Outage occurred during scheduled maintenance to upgrade the system or network element. The system or network element upgrade was completed successfully within expected times; however, FCC outage reporting thresholds were met.

To Fix Known Problems

Outage occurred during scheduled maintenance to fix known problems. The known problems were resolved successfully; however, FCC outage reporting thresholds were met.

Failed

Unexpected condition caused the planned maintenance activity to fail and FCC outage reporting thresholds were met.

Went Longer or Was Worse than Expected

The planned maintenance activity was completed successfully; however, due to unexpected conditions, planned maintenance took longer or had a greater impact than expected.

Power Failure (Commercial and/or Back-up) (does not include failures of DC/DC converters or fuses embedded in switches and transmission equipment, which should be reported as a Hardware Failure, unless the problem was caused by the power plant.)

Battery Failure

Batteries did not function as designed.

Breaker Tripped/Blown Fuses

Equipment failure associated with tripped breaker or blown fuse.

Extended Commercial Power Failure

System failure due to commercial power failure that extends beyond the design of back-up capabilities.

Generator Failure

Generator did not function as designed or ran out of fuel.

Inadequate Site-Specific Power Contingency Plans

System failure due to the insufficiency of the emergency operating procedures and contingency plans available and the resulting outage is prolonged because of lack of site-specific information. This includes equipment engineering data, portable engine hook-up hardware/procedures, load shedding plans, etc.

Inadequate Back-up Power Equipment Located on Customer Premise

Customer premise power equipment unable to support communications equipment due to extended loss of commercial or back-up power.

Inadequate/Missing Power Alarm

System failure associated with an un-alarmed (or under-alarmed) power failure, an alarm not provided initially due to inadequate standards, failure to implement standards or an alarm/alarm system failure (broken or modified). Because of the success in avoiding severe, battery-depletion failure where power alarms are effective and effectively responded to, system failures directly associated with power alarms should be classified as such, instead of as Procedural failures.

Insufficient Response to Power Alarm

System failure associated response to power failure: alarm system worked, but support personnel did not respond properly.

Lack of Power Redundancy

Failure directly associated with insufficient redundancy of power system components, including AC rectifiers/chargers, battery power plan, DC distribution facilities, etc.

Lack of Routine Maintenance/Testing

System failure resulting from infrequent power system testing, maintenance and/or detailed inspection.

Other

Overloaded/Undersized Power Equipment

System failure attributable to insufficient sizing/design of power configuration.

Rectifier Failure

System failure resulting from rectifier malfunction.

Scheduled Activity-Software Upgrade

Scheduled Maintenance-Hardware Replacement

Unidentified Power Surge

Equipment failure associated with unidentified power surge.

Procedural - Other Vendor/Contractor

Ad hoc Activities, Outside Scope of MOP

Unapproved, unauthorized work, or changes in agreed-to procedures.

Documentation/Procedures Out-of-Date, Unusable, Impractical

Lack of updated documentation/procedures, the correction/update is available but not incorporated locally, or the document is unwieldy. Some examples are: the use of inadequate indexing or cross-referencing, bits and pieces of information being too difficult to integrate, ineffective delivery vehicle, etc.

Documentation/Procedures Unavailable, Incomplete

Documentation or procedures (vendor or service provider) are not published; published, but not distributed; distributed, but not available on-site; or that some documentation is obscure/oblique, too general (lack of practical detail); too detailed/technical for practical use, etc.

Insufficient Staffing/Support

Unexpected conditions depleted available resources; predictable but unavoidable shortage (unreasonable demand); ineffective/inadequate roll-down or centralization arrangement; resource-intensive (new) technology outside scope/reach of existing automatic/remote administration systems, etc.

Insufficient Supervision/Control or Employee Error

Resulting from insufficient leadership, ineffective administration, and/or maintenance strategies (process or communication failures, conflicting priorities, etc.). This sub-category should be used when multiple procedural causes are indicated, and also when the service interruption results purely from an unintentional action by the employee.
Insufficient Training
Training not available from vendor; training not available from service provider; training available but not attended; training attended but provides inadequate or out-of-date information; training adequate but insufficient application followed; training need never identified, etc.
Other

Procedural - Service Provider
Documentation/Procedures Out-of-Date, Unusable or Impractical
Documentation/procedures are not updated; correction/update available, but not incorporated locally. Documentation/procedures are unwieldy; inadequate indexing or cross-referencing; bits and pieces of information difficult to integrate; ineffective delivery vehicle, etc.
Documentation/Procedures Unavailable/Unclear/Incomplete
Documentation or procedures (vendor or service provider) are not published; published, but not distributed; distributed, but not available on-site, etc. Documentation/procedures are obscure/oblique; too general - insufficient specificity; too detailed/technical for practical use, etc.
Inadequate Routine Maintenance/Memory Back-Up
Failure could have been prevented/minimized by simple maintenance routines. The resulting recovery action was delayed/complicated by old or missing program/office data tapes or disk, etc.
Insufficient Staffing/ Support
Unexpected conditions depleted available resources; predictable but unavoidable shortage (unreasonable demand); ineffective/inadequate roll-down or centralization arrangement; resource-intensive (new) technology outside scope/reach of existing automatic/remote administration systems, etc.
Insufficient Supervision/Control or Employee Error
Resulting from insufficient leadership, ineffective administration, and/or maintenance strategies (process or communication failures, conflicting priorities, etc.). This sub-category should be used when multiple procedural causes are indicated, and also when the service interruption results purely from an unintentional action by the employee.
Insufficient Training
Training not available from vendor; training not available from service provider; training available but not attended; training attended but provides inadequate or out-of-date information; training adequate but insufficient application followed; training need never identified, etc.
Other

Procedural - System Vendor
Ad hoc Activities, Outside Scope of MOP
Unapproved, unauthorized work or changes in agreed-to procedures. **Documentation/Procedures Out-of-Date Unusable or Impractical**
Documentation/procedures are not updated; correction/update available, but not incorporated locally. Documentation/procedures are unwieldy; inadequate indexing or cross-referencing; bits and pieces of information difficult to integrate; ineffective delivery vehicle, etc.
Documentation/Procedures Unavailable/Unclear/Incomplete
Documentation or procedures (vendor or service provider) are not published; published, but not distributed; distributed, but not available on-site, etc. Documentation/procedures are obscure/oblique; too general - insufficient specificity; too detailed/technical for practical use, etc.
Insufficient Staffing/ Support

Unexpected conditions depleted available resources; predictable but unavoidable shortage (unreasonable demand); ineffective/inadequate roll-down or centralization arrangement; resource-intensive (new) technology outside scope/reach of existing automatic/remote administration systems, etc.

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Resulting from insufficient leadership, ineffective administration, and/or maintenance strategies (process or communication failures, conflicting priorities, etc.). This sub-category should be used when multiple procedural causes are indicated, and also when the service interruption results purely from an unintentional action by the employee.

Insufficient Training

Training not available from vendor; training not available from service provider; training available but not attended; training attended but provides inadequate or out-of-date information; training adequate but insufficient application followed; training need never identified, etc.

Other

Simplex Condition

Non-service Affecting

Occurs when there is a failure of one side of a duplexed system such as a SONET ring yet an unprotected simplex service will still provide service for the duration of the outage. Do not use this root cause for the complete failure of a duplexed system or in cases where any of the circuits in the duplexed system are provided under Service Level Agreements (SLAs) which require protection.

Service Affecting

Failure of one side of a duplexed system such as a SONET ring where an unprotected simplex service was provided for a period of time but was not repaired during the usual maintenance window or in cases where any of the circuits in the duplexed system are provided under SLAs that require protection.

Spare

Spare Not Available – Sparing processes did not result in an available replacement (e.g., service provider inventory inaccuracies, transportation of spare located at centralized facility, etc.). However, if the unavailability is due to equipment beings Manufacture Discontinued, the cause should be listed
as **Spare On Hand - Manufacturer Discontinued (MD)**

Spare On Hand – Manufacturer Discontinued (MD)

Obtaining spare made difficult or complicated by MD status (e.g., service provider unaware of MD status, scarcity of MD spares, etc.).

Spare On Hand – Failed

Sparing processes provided an available replacement; however, the replacement malfunctioned (e.g., out-of-box failure of spare, incompatible software versions, etc.).

Traffic/System Overload

Common Channel Signaling Network Overload

SS7 system/network overload associated with (true) high traffic loads congesting signaling network elements or the SS7 link network. If the overload was associated with signaling traffic handling congestion, false or reactivated link congestion, inappropriate or incorrect SS7 network management message(s), protocol errors, etc., then consider the problem to be a Design - Software fault.

Inappropriate/Insufficient Network Management (NM) Control(s)

System/network overload or congestion associated with an ineffective NM system/switch response

resulting due to the lack of either effective NM control, that the system/switch response to control was inappropriate, or that its implementation was flawed. If failure was related to inappropriate control strategy or execution by NM organization, consider it a Procedural failure.

Ineffective Engineering/Engineering Tools

System/network overload or congestion directly associated with under-engineering of the system/network due to rapidly changing network demand, or introduction of new network components and/or technologies. If failure was associated with simple under-engineering (absent changing environment), consider it a Procedural failure.

Mass Calling - Focused/Diffuse Network Overload

System/network overload or congestion directly associated with unplanned, external trigger(s) causing a significant, unmanageable traffic load.

Media-Stimulated Calling - Insufficient Notification

System/network overload or congestion directly associated with a media-stimulated calling event where the event sponsor/generator failed to provide adequate advance notice, or provided inaccurate (underestimated) notification.

Other