

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Introduction to Generation Availability Data System (GADS) Wind Reporting

Registration and Reporting Fundamentals

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NERC Webinar

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RELIABILITY | ACCOUNTABILITY



- Background
- Wind Data Reporting Requirements
- Registration and Access
- Wind Plant Components
- Reporting Templates
- Using the GADS Wind Reporting Application
- Resources

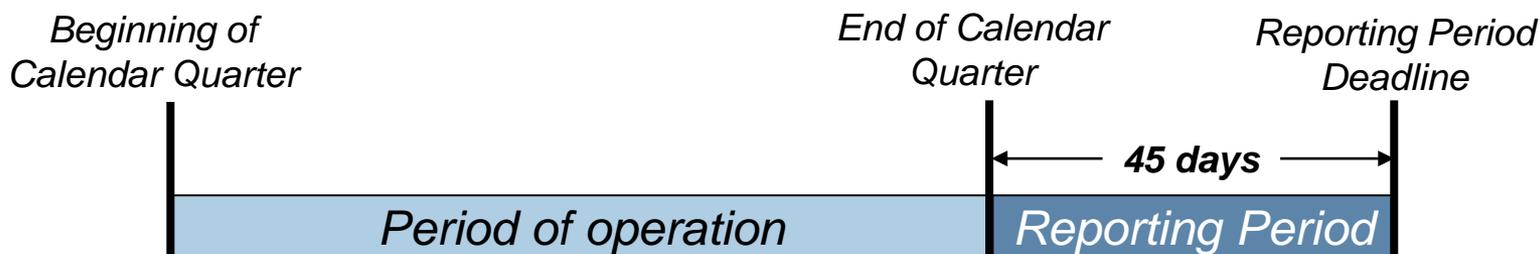
- **Background**
 - Requirements
 - Schedule
 - Reporting Frequency
 - Key Terminology
 - Data Reporting Instructions (DRI)
- Wind Data Reporting Requirements
- Registration and Access
- Wind Plant Components
- Reporting Templates
- Using the GADS Wind Reporting Application
- Resources

- NERC collects transmission, generation and demand response data for analysis and performance reporting of the bulk electric system
- Generator Availability Data System (GADS) applications are the collection tools NERC provides for the reporting of generator operating data
 - webE-GADS collects data for thermal and hydro generation
 - GADS Wind Reporting application will collect data for wind generation
- Wind data will be used by NERC to support activities such as:
 - Long-term and seasonal reliability assessments;
 - Studies on changing grid characteristics; and
 - Operational behaviors and performance

- **Mandatory data:**
 - **Generator characteristics**
 - Initial and whenever there is a change
 - **Performance data**
 - Capacity: gross actual, net actual and net maximum
 - Turbine hours: period, available, unavailable, derated, inactive reserve and Outside Management Control (OMC)
- **Voluntarily reported data**
 - **Component outage**
 - **Derate data**

- Reporters are wind plant generator operators
 - Having a total installed capacity greater than or equal to 75 MW
 - With a commissioning date of January 1, 2005 or later
 - Any wind generator operator who wishes to voluntarily report
- Phased in approach, beginning January 1, 2017
 - 2017 (year 1): Voluntary reporting
 - 2018 (year 2): Mandatory for plants 200 MW or greater
 - 2019 (year 3): Mandatory for plants 100 MW or greater
 - 2020 (year 4): Mandatory for plants 75 MW to 99 MW

- Monthly operating data submitted quarterly, within 45 calendar days after the end of each quarter
- Updates to data from previous quarters of the same calendar year are permitted during each reporting period



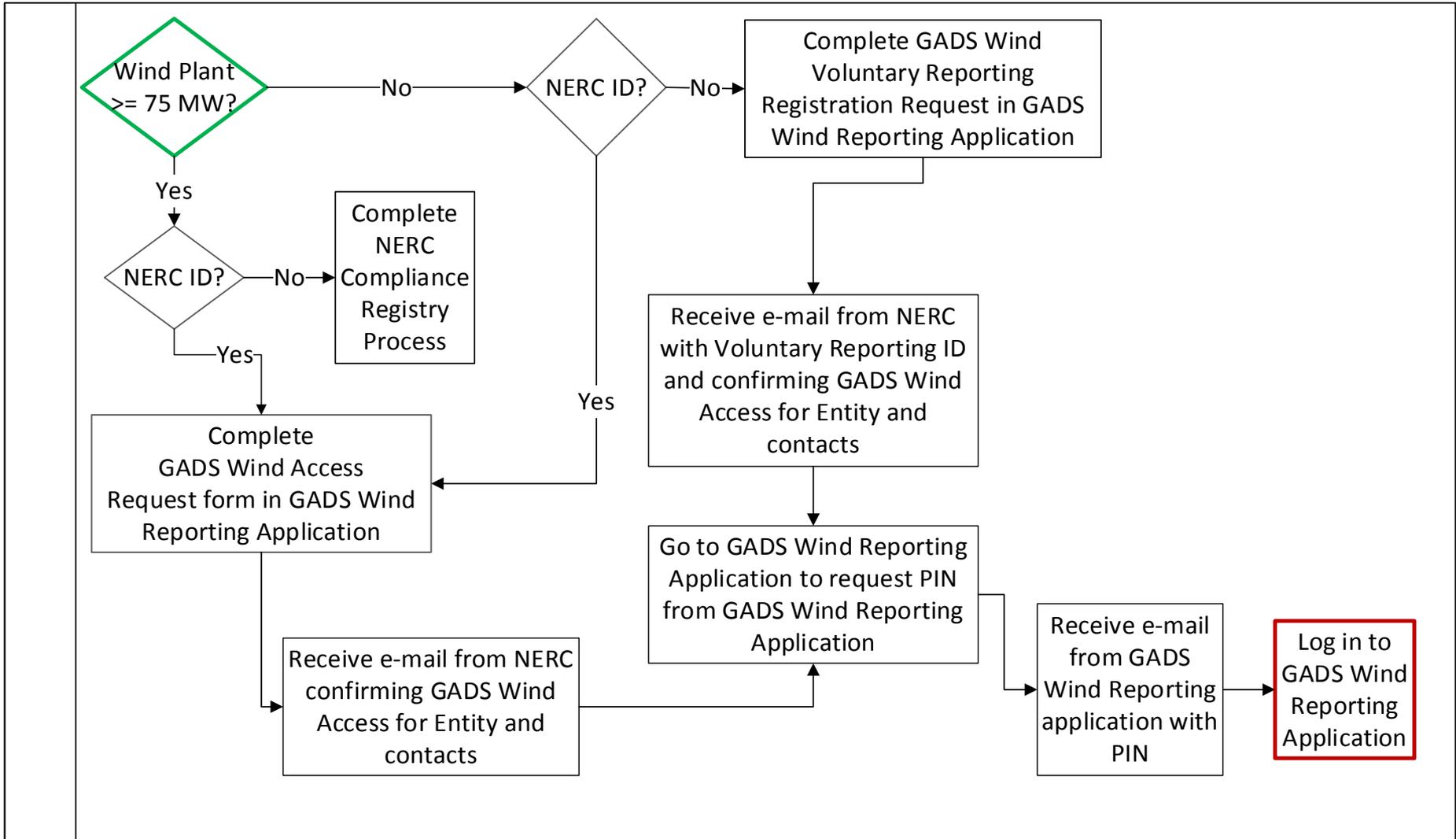
Quarter	Period of Operation	Reporting Period	Reporting Period Deadline
1	1/1 – 3/31	4/1 – 5/15	5/15
2	4/1 – 6/30	7/1 – 8/15	8/15
3	7/1 – 9/30	10/1 – 11/15	11/15
4	10/1 – 12/31	1/1 – 2/15*	2/15*

* Following year

- Background
- Wind Data Reporting Requirements
- **Registration and Access**
 - Registration
 - Process
 - Access
- Wind Plant Components
- Reporting Templates
- Using the GADS Wind Reporting Application
- Resources

- NERC Compliance Registration criteria for GADS Wind Reporting
 - Based on total installed capacity of the wind plant
 - Independent of the phased-in reporting time periods
- For wind plants with total installed capacity equal to or greater than 75 MW
 - The Generator Operator is required to have a NERC Compliance Registry ID (NCR ID)
 - The Generator Operator without an NCR ID
 - Required to complete that registration process prior to requesting access to the GADS Wind Reporting application
- For wind plants with a total installed capacity of less than 75 MW
 - A Generator Operator that already has an NCR ID will be required to use its NCR ID to voluntarily report those plants into the GADS Wind Reporting application
 - An operator of a wind plant without an NCR ID may request a Voluntary Reporting ID to submit data to the GADS Wind Reporting application

- An entity must have either
 - A NERC Compliance Registry ID (NCR ID) or
 - A Voluntary Reporting ID (VR ID)
- Each entity must complete the GADS Wind Access Request form to:
 - Specify that the entity requests access to the GADS Wind Reporting application; and
 - Provide NERC with the contact information of authorized users who will submit data on behalf of the entity
 - Only the Primary Compliance Contact may submit the GADS Wind Access Request form
 - Confirmation e-mail from NERC will be sent within three business days
 - Response during initial registration period between March 2017 and June 2017 may take up to five business days



The screenshot shows the GADS Wind Data Submission Site. At the top, there is a header with the NERC logo and the text "NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION". Below the header is a navigation menu with the following items: Home, Submissions, Request NCR Number, Request VR Number (highlighted with a red box and the number 2), Reports, and Contact Us. The main content area is titled "User Authorization" and contains the following fields: "Authorized email address: *" with an input box, "Authorization PIN: *" with an input box, and a "Submit" button. A link "Need Personal Identification Number? Please click [here](#)." is located to the right of the PIN field. A red box with the number 1 highlights the link "Request access to GADSWind Reporting by clicking [here](#)".

- Go to the GADS Wind Reporting application site at:
 - <https://gadswind.nerc.net/>
 - 1. For entities with an NCR ID, click on the link for “Request access to GADS Wind Reporting”
 - Complete the form and click **Submit**
 - 2. For entities who are requesting a Voluntary Reporting ID, click on **Request VR Number**
 - Complete the form and click **Submit**
 - Confirmation e-mails from NERC will be sent to the submitter of the form and the authorized users identified on the form

Request for Account Authorization:

* Company Name:

* NCR Number:

* Primary Contact Name:

* Email Address:

* Address:

* City:

* State / Province:

* Country:

* Zip / Postal Code:

* Phone:

* Description:

*Enter description as:
Company Access Request*

Add Additional Contacts +

No Additional Contacts Added

Submit

Add Contact

Full Name:

Email Address:

Phone:

Request for Voluntary Reporting ID:

* Company Name:

* Corporate Address:

* City:

* State / Province:

* Country:

* Zip / Postal Code:

* Corporate Website:

* Corporate Phone:

* Primary Contact Name:

* Contact Title:

* Contact Email:

* Primary Phone:

Alternate Phone:

Add Additional Contacts +

Add Contact

No Additional Contacts Added

* Regions in which entity operates:

- FRCC MRO
 NPCC RF
 SERC SPP RE
 TEXAS RE WECC
 OTHER

Full Name:

Email Address:

Phone:

Add Contact

Cancel

Submit

1 Submissions

2 Authorized email address: *

3 Authorization PIN: * [Need Personal Identification Number? Please click here.](#)

Submit

- Each authorized user must have a PIN to access the GADS Wind Reporting application
- Go to the GADS Wind Reporting application site at:
 - <https://gadswind.nerc.net/>
 - 1. In the left panel, click on **Submissions**
 - 2. Click on the link for “Authorization is required to access this page, please click here”
 - Enter the authorized e-mail address
 - 3. To obtain a PIN, click on the link for “Need Personal Identification Number? Please click here.”

- An e-mail from NERC_SPM_NOREPLY@nerc.net will immediately be sent to the authorized e-mail
 - Subject will be “GADSWind – PIN request”

Your requested GADSWind PIN number: 1I4PSLOK

Please save this PIN number for future reference.

This PIN Number will be required to access the Submission and Reports pages.

3353 Peachtree Road NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

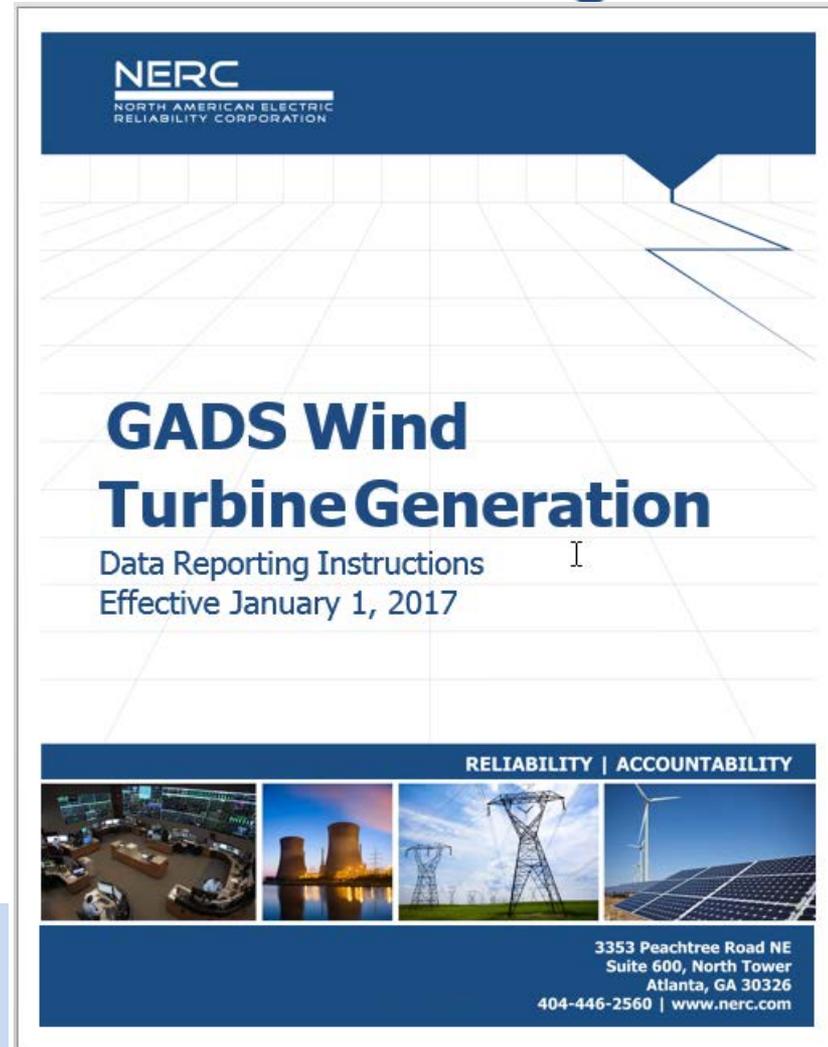
RELIABILITY | ACCOUNTABILITY

- Background
- Wind Data Reporting Requirements
- Registration and Access
- **Wind Plant Components**
 - Plants
 - Plant Boundaries
 - Groups
 - Sub-groups
 - Terms
- Reporting Templates
- Using the GADS Wind Reporting Application
- Resources

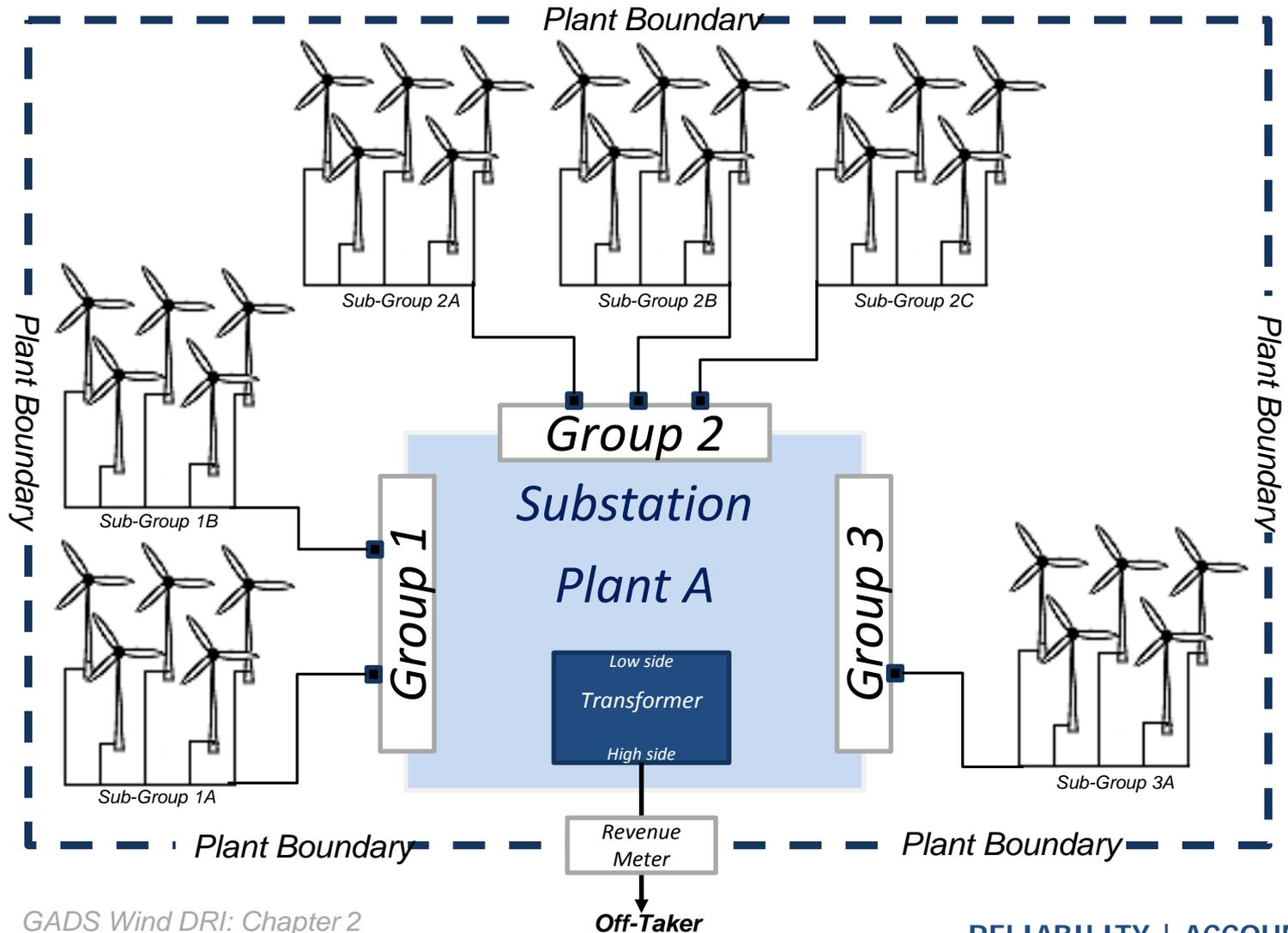
- Data Reporting Instructions (DRI)
- Plant terms
 - Plant
 - Group
 - Sub-Group
- GADS Wind Reporting application terms
 - Configuration Data
 - Sub-Group Ownership Status

- The GADS Wind DRI provides:
 - Detailed instructions for setting up the various files for submission
 - Identification of Plant boundaries
 - A list of definitions
 - Equations for resource and equipment calculations
 - System component codes
 - OMC
 - Outage classification guidelines
 - Overlapping events
 - Data quality control

The GADS Wind DRI will post minor updates as needed at 6 month intervals beginning May/June 2017 for new codes, fix grammar, or to add clarification.



Components of a Wind Plant for GADS



- Plant:
 - A wind generating facility that is located in a single geographical area
 - Usually defined by an interconnect agreement and other legal documents
 - Consists of at least one group and one sub-group
- Total installed capacity of the plant determines whether mandatory reporting is required
- No limit on the number of plants
- Plant IDs or names are defined and maintained by the user and may be changed

- The GADS Wind DRI lists several examples for boundary definitions:
 - The preferred plant boundary at the revenue meter is at the high-voltage terminals of the generator step-up (GSU) transformer and the station service transformers (See slide 18)
 - In cases of multiple sub-groups, the plant boundary will be at the metering of the low side of the substation transformer (load) side of the generator voltage circuit breakers
 - Any equipment boundary that is reasonable considering the design and configuration of the generating unit
- Boundaries can be both physical and logical. It is the:
 - Area around all equipment for which the plant is responsible
 - Border where someone else (off-taker) assumes responsibility for the power generated. A revenue meter can be at this point.
- Plant boundaries may not extend beyond the revenue meter
 - Net metering is always at the revenue meter

- Groups
 - Typically reflect phases of development that occur in different years
 - Must have at least one sub-group
- No limit to the number of groups
- Group IDs or names are defined and maintained by the user and may be changed

- Sub-groups
 - Consist of turbines of the same manufacture, model, and capacity with a similar commissioning date where commissioning can occur over months
 - Level at which all Performance and optional Component Outage data is reported
 - No limit to number of sub-groups
 - Are assigned unique IDs by the GADS Wind Reporting application and remain with the Sub-Group for its life
 - Name of the Sub-Group may be changed

- **Configuration Data:**
 - Characteristics about the wind plant
 - Identification
 - Location
 - Equipment
 - Environment
 - Ownership status
- **Sub-Group Ownership Status:**
 - Used to manage the state of each sub-group within the application
 - Facilitates transfer of ownership
 - Different from reporting of the operational status of the sub-group on Performance records

- Background
- Wind Data Reporting Requirements
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- Wind Plant Components
- **Reporting Templates**
- Using the GADS Wind Reporting Application
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- Three reporting templates are available at:
 - <http://www.nerc.com/pa/RAPA/gads/Pages/GADS-Wind-DRI.aspx>
 - 1. Sub-Group Template**
 - Used for requesting sub-group IDs or updating sub-group configuration data
 - 2. Performance Template**
 - Used for reporting performance data
 - 3. Component Outage Template**
 - Used for reporting component outage detail and derate data
- Two formats for reporting
 - 1. Excel Format (.xls or .xlsx)**
 - Row 1 of template-named tab contains column headers
 - Data entry begins in row 2
 - Reference tab with applicable field format information included in each template
 - 2. Comma-separated variable (CSV) format**
 - Refer to the DRI for details on column header names and order of columns

- Sub-Group IDs
 - Assigned by the GADS Wind Reporting application
 - Unique for the lifetime of the sub-group
 - Should not be requested when a plant has been sold to another entity
 - Ownership Transfer process will reassign the Sub-Group ID
 - Process is covered in the full-day GADS Wind training course
- For new Sub-Group IDs:
 - Leave the Sub-Group ID and effective date blank in the Sub-Group template
- All other Sub-Group Ownership states require at least the Sub-Group ID and the effective date
- Same template can include both new Sub-Group ID requests and updates to configuration data of existing Sub-Groups

- Background
- Wind Data Reporting Requirements
- Registration and Access
- Wind Plant Components
- Reporting Templates
- **Using the GADS Wind Reporting Application**
 - Import Process
 - Sub-group
- Resources

<https://gadswind.nerc.net/>

The screenshot shows a web browser window with the URL <https://gadswind.nerc.net/>. The page title is "GADS Wind Data Submission Site". Below the title is the NERC logo and the text "NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION". A red box highlights a "Navigation Panel" on the left side of the page, which contains the following links: Home, Submissions, Request NCR Number, Request VR Number, Reports, and Contact Us. To the right of the navigation panel is a "User Authorization" form. The form has two input fields: "Authorized email address: *" and "Authorization PIN: *". Below the PIN field is a link: "Need Personal Identification Number? Please click [here](#)". A "Submit" button is located below the input fields. At the bottom of the form, there is a red link: "Request access to GADSWind Reporting by clicking [here](#)".

GADS Wind Data Submission Site



Navigation Panel

[Home](#)

[Submissions](#)

[Request NCR Number](#)

[Request VR Number](#)

[Reports](#)

[Contact Us](#)

This GADS Wind Reporting application has been developed to facilitate reporting of wind plant information. Wind plants with a Total Installed Capacity of 75 MW or more with a commissioning date of January 1, 2005 or later will be required to report on a quarterly basis according to the following phased-in schedule:

- January 1, 2017: The data collection period for voluntary reporting begins.
- January 1, 2018: Mandatory reporting begins for plants with a Total Installed Capacity of 200 MW or larger.
- January 1, 2019: Mandatory reporting begins for plants with a Total Installed Capacity between 100 MW and 199.99 MW.
- January 1, 2020: Mandatory reporting begins for plants with a Total Installed Capacity between 75 MW and 99.99 MW.

Detailed Wind Data Reporting Instructions are available [here](#).

Questions regarding reporting requirements for wind may be directed to gadswind@nerc.net.

Authorized Accounts

Authorized entities user may submit data for.

Entity ID	Entity Name
	1

Can't find Entity? Please click [here](#). 2

Submission Data

Instructions:

Respective file type must be selected.
Only Excel and CSV files are supported.

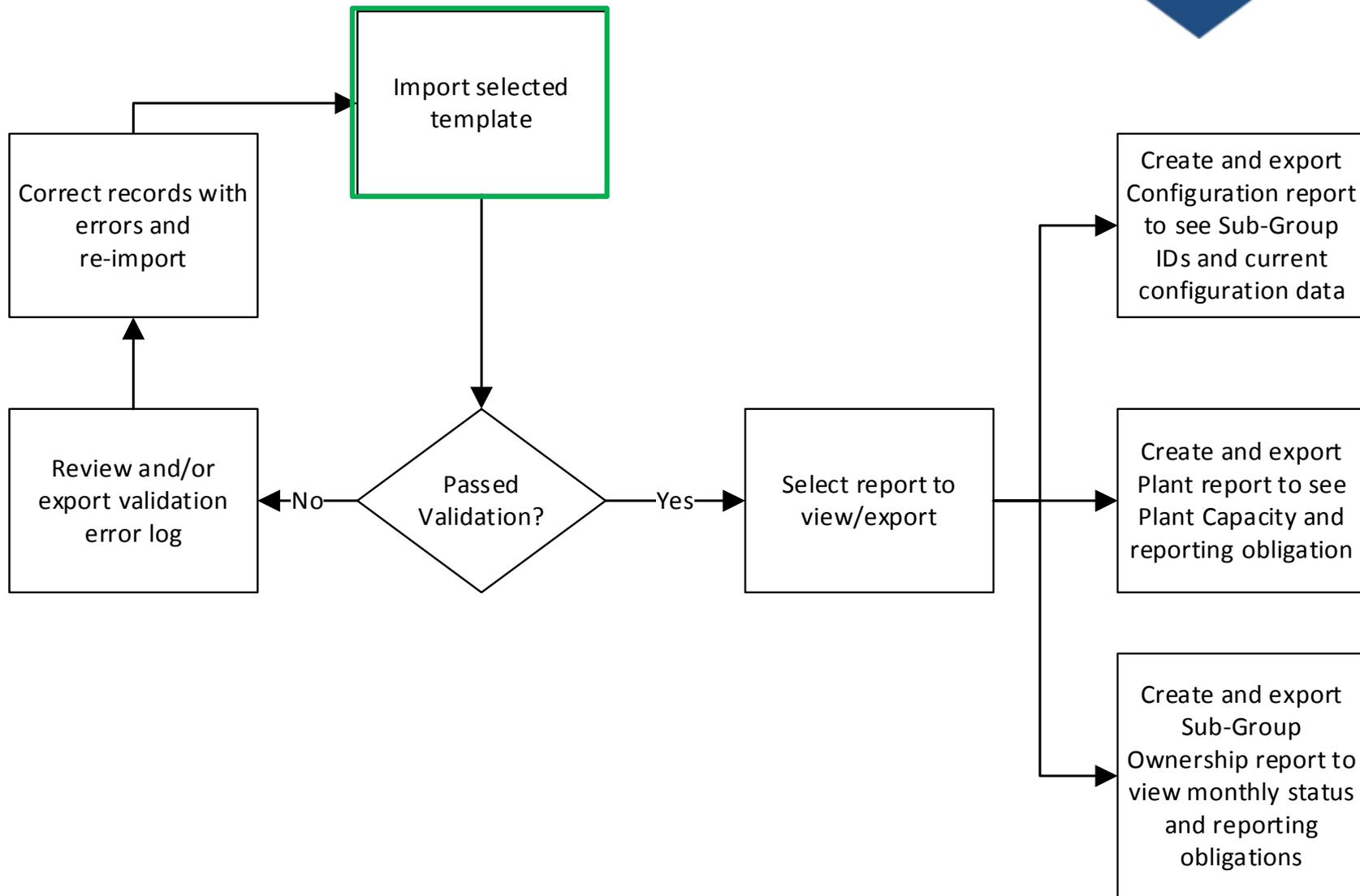
Select submission type: SubGroup Performance Component Outage 3

Browse... 4

Upload 5

Download templates and view reporting instructions? Please click [here](#). 6

1. List of entities for which the user may submit data
2. Click on the link to request access to an entity that the user should have access to, but is not in the list.
3. Select the type of data template to import.
4. Click Browse to find the file to import.
5. Click Upload to import the data.
6. Click the link to go to the GADS Wind Reporting page on NERC's website for the templates and GADS Wind Data Reporting Instructions (DRI).



- Enter Sub-Group configuration data and ownership status, one sub-group ID per row, on the Sub-Group template
- In the left panel, click on **Submissions**
- Select to import the Sub-Group template
- Validation process reports any validation errors
 - Validation errors shown at the bottom of the screen may be exported to Excel
- Correct any Sub-Group records that did not pass validation
- Import the corrected Sub-Group configuration data
 - System accepts the sub-group records that pass validation when other sub-groups do not pass validation.
 - Creation of multiple sub-group IDs is not permitted when the sub-group template is imported again; a validation error that a sub-group ID exists will be issued.
 - System will not overwrite sub-group records where no changes have been made.

- Import validation status shows at the top of the Submissions screen

Upload status 'SUB-GROUP TEMPLATE-20170216-TEST DATA-REGIONAL ENTITY SUBMISSIONS-DEMO IMPORT.XLSX: 0 record(s) passed validation : 4 record(s) failed (See 'Validation Failures' below for details).

Authorized Accounts

Authorized entities user may submit data for

- Details of validation errors displayed at the bottom of the Submissions screen
 - Click “Export to Excel to see details and save validation error log

Browse... Upload

Download templates and view reporting instructions? Please click [here](#).

Validation Failures:

ID	Type	Column	Row	Error Description	Value	Required
NCR00000	SUBGROUP	SubGroupName	2	Value can not contain any special characters	Test Sub-Group 1	True
NCR00000	SUBGROUP	SubGroupName	3	Value can not contain any special characters	Test Sub-Group 2	True
NCR00000	SUBGROUP	SubGroupName	4	Value can not contain any special characters	Test Sub-Group 3	True
NCR00000	SUBGROUP	SubGroupName	5	Value can not contain any special characters	Test Sub-Group 4	True

Export to Excel

Primary Validation: Utility ID, user, and file format

Validation Results

[filename] has failed Validations. Please make corrections and resubmit the file.

[Export to Excel](#)

#	Utility ID	Row	Validation Error Message
1	NCR10394	1	Not Authorized to submit for this Utility
2	NCR10742	3	Not Authorized to submit for this Utility
3	VR103744	7	Utility does not exist

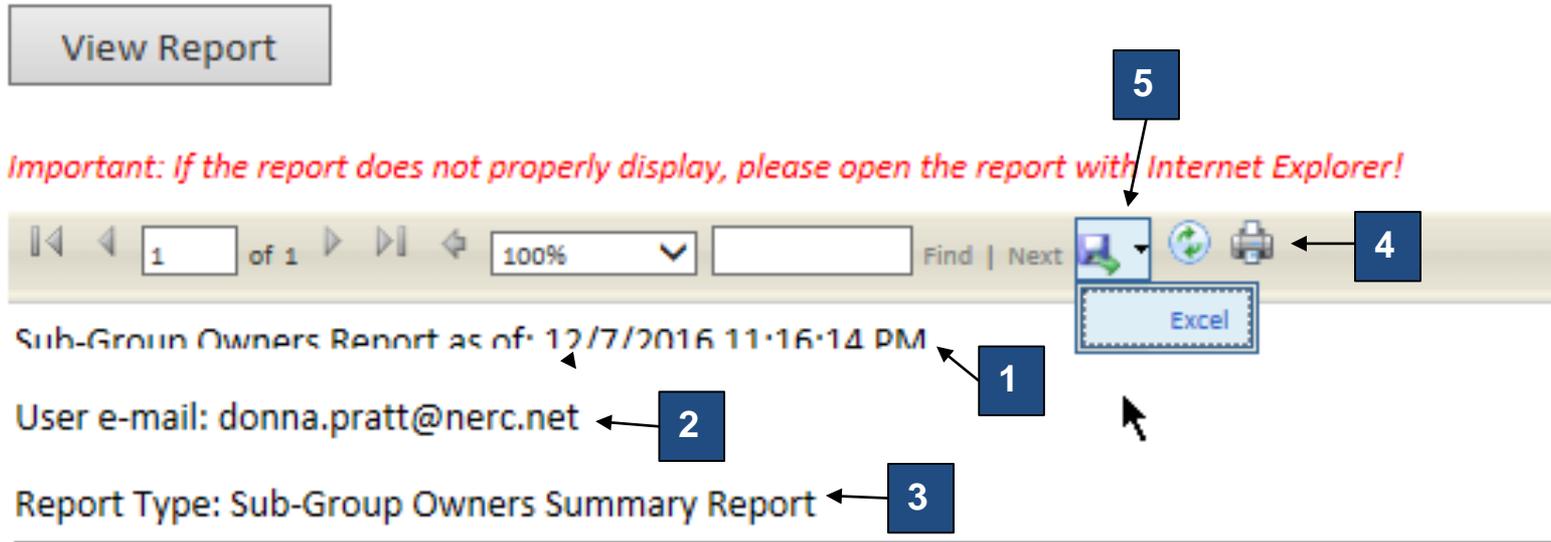
Secondary Validation: record content

Validation Results

[filename] has failed Validations. Please make corrections and resubmit the file.

[Export to Excel](#)

#	Subgroup ID	Column	Row	Value	Validation Error Message
1	SG1001	Country	1	null	Invalid Country code. See Appendix F for codes.
2	SG2144	RotorDiam	1	-25	Invalid entry. Value must be positive.
3	SG1002	State	2	null	Invalid State/Province code. See Appendix F for codes.
4	SG1002	Latitude	3	TX	Invalid format. Required format is [-] ddd.dddd
5	SG1004	RotorDiam	5	-25	Invalid entry. Value must be positive.
6	SG1005	Country	5	null	Invalid Country code. See Appendix F for codes.
7	SG1006	Latitude	10	TX	Invalid format. Required format is [-] ddd.dddd
8	SG1012	State	17	null	Invalid State/Province code. See Appendix F for codes.



1. Date and time of view/report
2. User e-mail used to produce view/report
3. Report Name
4. Print
5. Export to Excel

- To view the Sub-Group IDs
 - Select the Sub-Group Configuration to view or export the Sub-Group ID assigned to each sub-group
- The current complete sub-group configuration record is exported to Excel format

Sub-Group Configuration Report

**Sub-Group
ID**

	A	B	C	D	E	F	G	H	I	J
1	Utility ID	Region	Plant ID	Group ID	Sub-Group ID	Sub-Group Name	ISOID	Country	Nearest City	State
2	NCR88888	WECC	54 Big Turbine Valley	61 GE Turbines	0000000007	Big Sub Group		United States	San Diego	CA
3	NCR88888	TRE	1 First Wind Plant Ever	84 North Side Group	0000000004	First Sub Group		United States	Austin	TX
4	NCR88888	TRE	12 Better by the Dozen	43 Another Group of Turbines	0000000005	Eastern Sub Group		United States	Austin	TX

	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	Latitude	Longitude	Elevation	Wind Regime	AAWS	Scada Mfg	Scada Mdl	Com Year	Total Installed Cap	Reserve Cap	Turbine Count	System MW	Max Turbine Cap
2	32.7200	-117.1600	110	1-Seashore	19.00	Proprietary	1		42.500	15.000	25	1.700	2.300
3	30.2700	-97.7500	110	2-Plain	13.00	Proprietary	1	2015	100.000	35.000	40	2.500	2.800
4	30.2700	-97.7500	110	2-Plain	13.00	Proprietary	1	2015	100.000	35.000	40	2.500	2.800

	X	Y	Z	AA	AB	AC	AD	AE
1	Turbine Mfr	Turbine Mdl	Turbine Ver	Rotor Height	Rotor Diameter	Cutinwind Speed	Low Cutout Windspeed	High Cutout Windspeed
2	General Electric	1	1	25.00	48.00	13.00	11.00	22.00
3	Clipper	1	2	27.00	55.00	9.00	8.00	19.00
4	Clipper	1	2	27.00	55.00	9.00	8.00	19.00

	AF	AG	AH	AI	AJ	AK
1	Wind Turbulence	Average Windspeed	Windshear	Ref Anemometer Height	Min Opt Temp	Max Opt Temp
2	2-Mild	17.00	2-Moderately Rough	22	4	97
3	4-Strong	12.00	4-Very Rough	22	4	97
4	4-Strong	12.00	1-Smooth	22	4	97

	AL	AM	AN	AO
1	Ownership Status	Effective Date	Transfer To Entity	Transfer From Entity
2	AV-Active	1/13/2017		
3	AV-Active	12/31/2016		
4	AV-Active	11/30/2016		

- Purpose of the Plant report is to identify plants that have a mandatory reporting requirement
 - Sub-Group data is aggregated based on Plant ID Name
- Reporting Obligation status is based on phased-in reporting thresholds at the time the report is generated

Utility ID	Region	Plant ID Name	nerc_name	Sub-Grp Count	Total Installed Capacity	Reporting Obligation
NCR61166	SERC	Below Threshold Plant		1	24	Voluntary
NCR61166	SERC	My First Plant		3	224	Voluntary <i>Mandatory in 2018</i>
NCR61166	SERC	Not My First Plant		1	24	Voluntary
NCR61166	SERC	Wind Plant 17		3	72	Voluntary
NCR99922	NPCC	My First Plant		2	124	Voluntary <i>Mandatory in 2019</i>
NCR99922	NPCC	Wind Plant 250		4	360	Voluntary <i>Mandatory in 2018</i>
NCR55556	WECC	54 Big Turbine Valley		1	42.5	Voluntary
NCR55556	WECC	My First Plant		2	124	Voluntary <i>Mandatory in 2019</i>
NCR55556	SERC	Not My First Plant		10	240	Voluntary <i>Mandatory in 2018</i>
NCR55556	WECC	Wind Plant 143		4	170	Voluntary <i>Mandatory in 2019</i>
NCR66516	TRE	1 First Wind Plant Ever		1	100	Voluntary <i>Mandatory in 2019</i>
NCR66516	TRE	12 Better by the Dozen		1	100	Voluntary <i>Mandatory in 2019</i>
NCR66516	SERC	Big Plant		2	31219.65	Voluntary <i>Mandatory in 2018</i>
NCR66516	NPCC	My First Plant		1	24	Voluntary
NCR66516	TRE	Wind Plant 51		4	400	Voluntary <i>Mandatory in 2018</i>
NCR66516	TRE	Wind Plant 90		5	500	Voluntary <i>Mandatory in 2018</i>

<http://www.nerc.com/pa/RAPA/gads/Pages/GADS-Wind-DRI.aspx>

The screenshot shows the NERC website header with the logo and navigation links. The main content area is titled "GADS Wind Turbine Generation Data Reporting Instructions" and includes a detailed description of the reporting requirements, a list of reporting start dates from 2017 to 2020, and contact information for questions. A table at the bottom lists related documents like "Wind Data Reporting Instructions" and "GADS Wind Reporting Templates".

Program Areas & Departments > Reliability Assessment and Performance Analysis > Generating Availability Data System (GADS) > GADS Wind Turbine Generation Data Reporting Instructions

GADS Wind Turbine Generation Data Reporting Instructions

The *GADS Wind Turbine Generation Data Reporting Instructions* have been developed to assist wind plant personnel in reporting information to NERC's GADS Wind Reporting application. The instructions detail the procedures, schedule, and format to follow when reporting data. Wind plants with a Total Installed Capacity of 75 MW or more with a commissioning date of January 1, 2005 or later will be required to report on a quarterly basis according to the following phased in schedule:

- January 1, 2017: The data collection period for voluntary reporting begins.
- January 1, 2018: Mandatory reporting begins for plants with a Total Installed Capacity of 200 MW or larger
- January 1, 2019: Mandatory reporting begins for plants with a Total Installed Capacity between 100 MW and 199.99 MW
- January 1, 2020: Mandatory reporting begins for plants with a Total Installed Capacity between 75 MW and 99.99 MW

Questions regarding reporting requirements for wind may be directed to gadswind@nerc.net

Click here for: GADS Wind Reporting Application

Type	Title	Date
+	Wind Data Reporting Instructions (1)	
+	GADS Wind Reporting Templates (3)	
+	Archives (2)	

Please direct all inquiries to gadswind@nerc.net



Contact: [*gadswind@nerc.net*](mailto:gadswind@nerc.net)