

Customer Connections Portal User Guide

- Request Bus Code, Facility Code
- Submit PDUP

Date: December 6, 2022

Version: 1.0

Classification: Public

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About This Guide

The 'AESO Enterprise Data Portal' is a suite of online portals meant to provide a unified platform for secure information exchange with external stakeholders. The 'Customer Connections Portal' is part of that suite, meant for exchange of data related to the Connection, Behind-the-Fence, and Contract processes. The Project Data Update Package (PDUP) submission process is one of the processes that have been built in the portal. The Transmission Facility Owners (TFO) and market participants (MPs) will use this portal at different stages of a project to submit PDUPs to the AESO.

This guide is specific to the functions performed by users to make a successful PDUP submission. The document will provide guidance on:

- How to **request a Bus or Facility code** from AESO
- How to perform **PDUP submissions** in the portal
- **Notifications** while performing the above functions

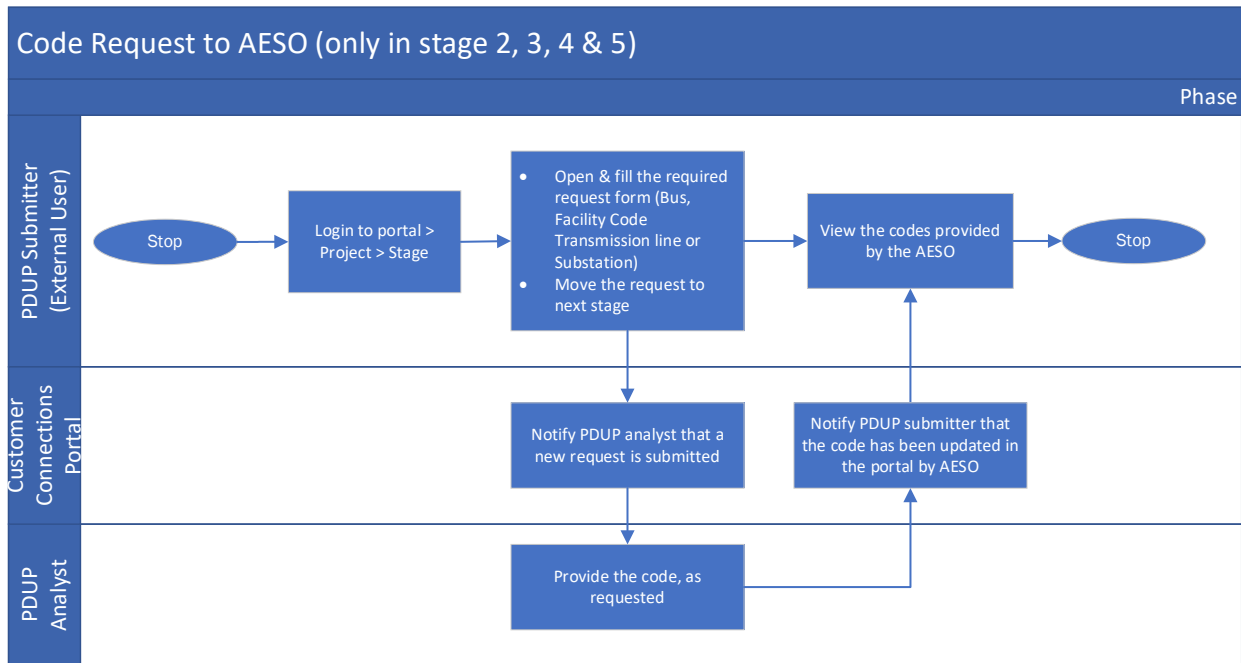
Note: *In this document, the Customer Connections Portal will be referred to as CGA Portal or only Portal. Customer Connections Portal and CGA Portal are the same.*

PDUP Submitter and External user terms are used interchangeably, which means the non-AESO portal user who are responsible for submitting the PDUP.

Screenshots have been created using dummy data and users and usernames have been stricken-off for privacy reasons.

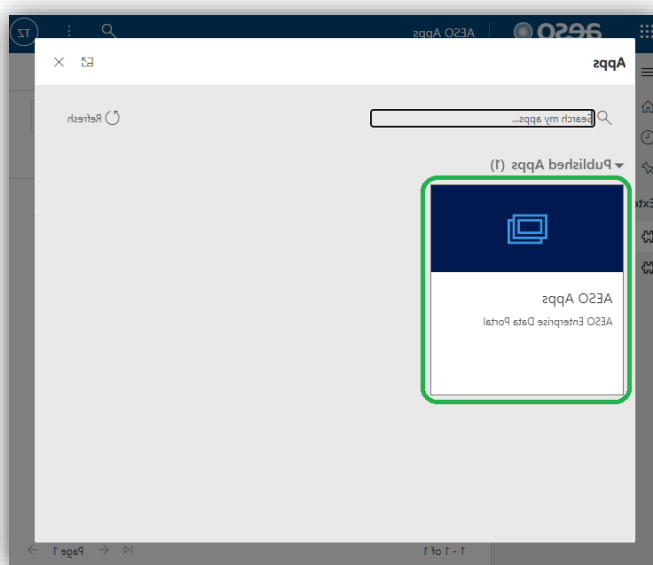
1. Request Bus or Facility code from AESO

The external users (TFO, study consultant etc.) that are responsible for PDUP submissions can request for Bus and Facility (Substation or Transmission Line) code via portal prior to their PDUP submission. The notification of request goes to the Project Engineer (PDUP Analyst) within AESO, who then provides the required code.



1.1. Initiate Code Request

1. Click on AESO Apps to see the project you are working on.



- Open the project where you need to request the code.

Project Name	Project Number	Project Type	Created On	Created By	Modified On
CGASmokeTest	3000	Connection	4/21/2022 5:35 AM	TST-Barinderjit S...	4/21/2022 12:25...
CGASmokeTest2	3001	Behind the fence	4/21/2022 5:36 AM	TST-Barinderjit S...	4/21/2022 5:36 ...
CGASmokeTest3	3002	System	4/21/2022 5:37 AM	TST-Barinderjit S...	4/21/2022 12:10...
Test-Barinder	5000	Connection	4/21/2022 4:14 AM	TST-Barinderjit S...	4/21/2022 4:14 ...

- Open the required stage of the project.

Test-Barinder - Saved
CGA Project

General | Communication Channel

Project Number * 5000 | Project Type * Connection

Project Name * Test-Barinder

Project Stages

Stage Number ↑

Stage 1

Stage 2

Stage 3

Stage 4

Stage 5

1 - 5 of 5

- Open the required code request form
Bus Code Request / Facility (Transmission Line) / Facility (Substation)

5000 - Stage 5 - Saved
CGA Stage

General Documents **Busses Request Form** FCR (Transmission Lines) FCR (Substations)

Request Bus or Facility Code using the request forms in adjacent tabs
FCR (Transmission Lines) = Facility Code Request for Transmission Line
FCR (Substations) = Facility Code Request for Substation

Project Number 5000 Stage Number Stage 5

PDUP Submissions + New CGA PDUP Subm... Refresh

Name	Energization #	Submission Date	Acceptance Date	Accepted Conditionally	Request Status
PDUP-5000-Stage 5-E12-01	12			No	Initiate
PDUP-5000-Stage 5-E444-01	444			No	Initiate
PDUP-5000-Stage 5-E678-01	678	4/21/2022		No	In-Review

1 - 3 of 3 Page 1

1.1.1. Bus Code Request

1. Open a New 'Bus Code Request'

2222 - Stage 2 - Saved
CGA Stage

General Documents **Busses Request Form** FCR (Transmission Lines) FCR (Substations)

Request Bus Code using this request form

New Bus Request Code Refresh

Topological node name	KV	Area	Facility Code	Request Status
No data available.				

2. An empty Bus code request record will get created

2222 - Stage 2 - Saved
CGA Stage

General Documents **Busses Request Form** FCR (Transmission Lines) FCR (Substations)

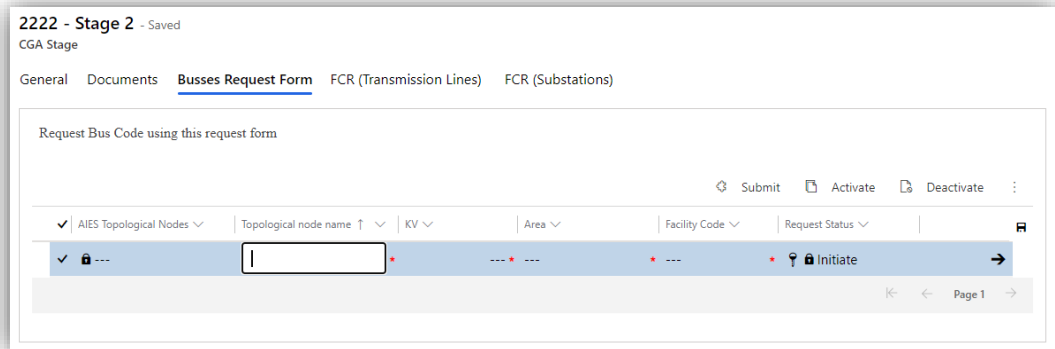
Request Bus Code using this request form

New Bus Request Code Refresh

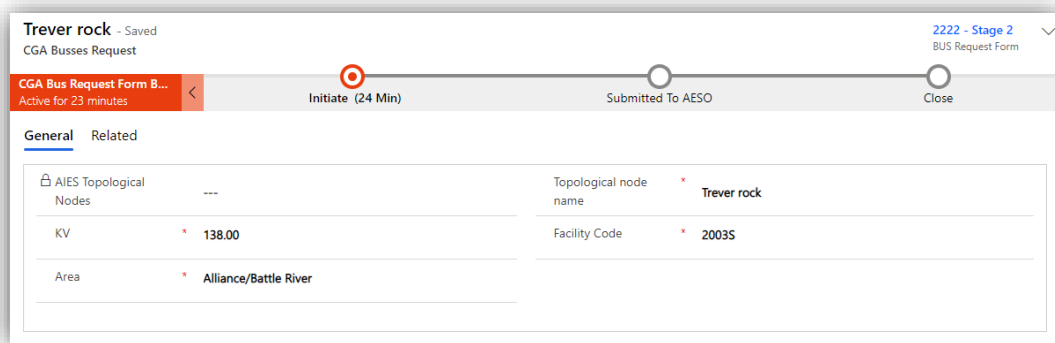
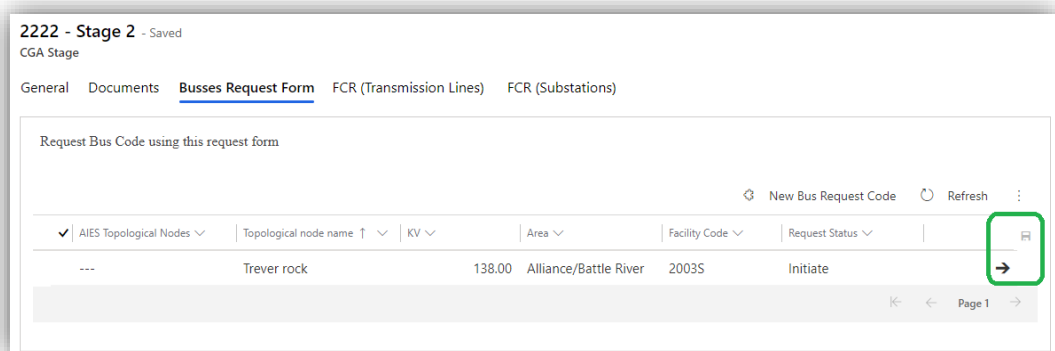
Topological node name	KV	Area	Facility Code	Request Status
---	---	---	---	Initiate

Page 1

3. The record can be filled in using either the List view or the Form view within the portal:
 - a. **List view**, with one click under the column name. 'AIES Topological Nodes' to be value will be provided by the AESO, so leave it blank. Fill rest of the fields and save



- b. **Form view**, click on arrow or double click on the record to open the record in form view.



1.1.2. Facility Code Request

Facility code request (FCR) can be submitted for Transmission Lines or Substations. The process of opening the form, filling, submitting etc. will remain the same as the Bus Code Request except the 'Facility Code' field value will be provided by the AESO.

1.2. Submit Code Request

1. After the request fields are populated submit the request to the AESO by moving the stage from 'Initiate' to 'Submitted to AESO'

Trever rock - Saved
CGA Busses Request

2222 - Stage 2
BUS Request Form

CGA Bus Request Form B...
Active for 25 minutes

Initiate (25 Min) Submitted To AESO Close

Active for 25 minutes

Next Stage >

General Related

AIES Topological Nodes ---

KV * 138.00

Area * Alliance/Battle River

Topological node * Trever rock

Facility Code * 20035

2. Confirm the request submission.

Initiate (25 Min) Submitted To AESO

Bus Request Form Confirmation

This will submit the Bus Request Form to AESO and you will not be able to make any changes to form. Do you want to continue?

Yes No

3. Multiple requests can be submitted from list view by selecting the records for submission and then using the SUBMIT button.

General Documents Busses Request Form FCR (Transmission Lines) FCR (Substations)

Request Bus Code using this request form

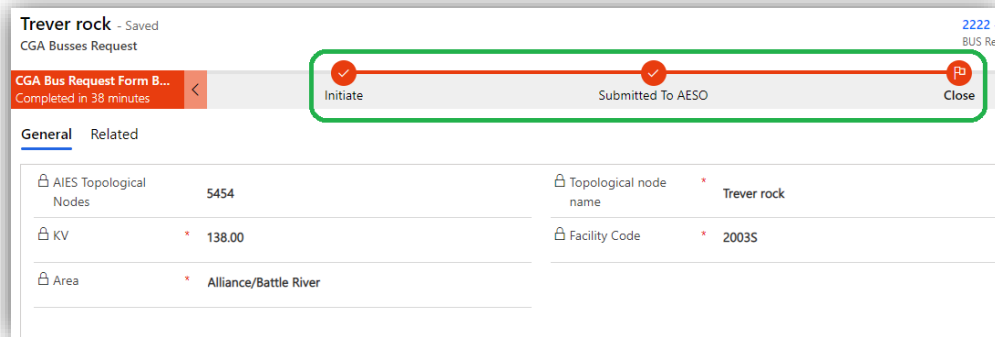
Edit Submit Complete Activate

✓ AIES Topological Nodes	Topological node name ↑	KV ↓	Area ↓	Facility Code ↓	Request Status ↓
✓ --	11	*	4.00 * Brooks	* 23	* Initiate
✓ --	21		2.00 Abraham Lake	12	Initiate
	212		1.00 Airdrie	12123	Submitted To AESO

Page 1

1.3. Close Code Request

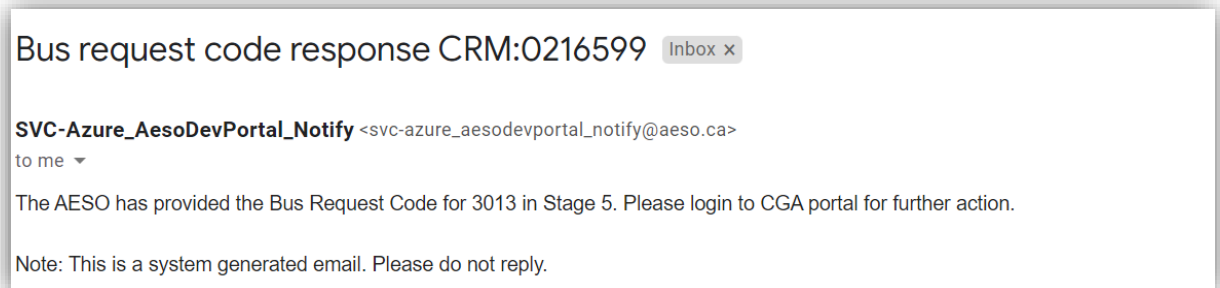
1. The AESO project engineers will get notified when a request is submitted. and they will provide the 'AIES Topological Nodes' or 'Facility Code' value to fulfill the request and move it to 'Close' stage.



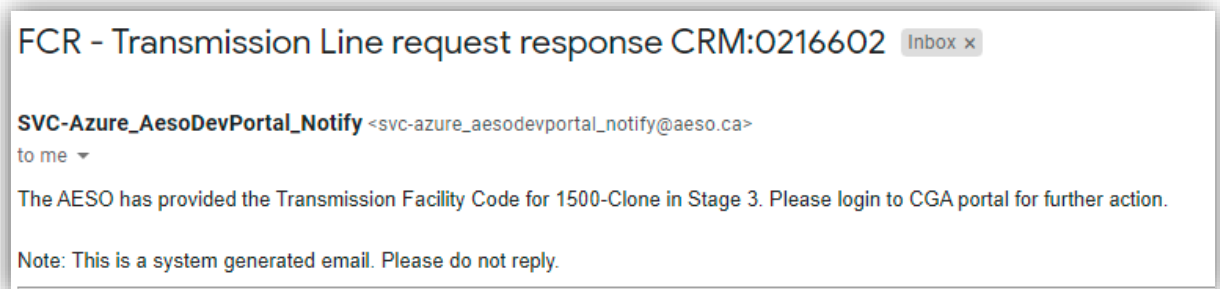
2. When closed, the system will generate a notification to the external user, so they can login to the portal to look up the code.

Examples of email notifications when AESO provides codes:

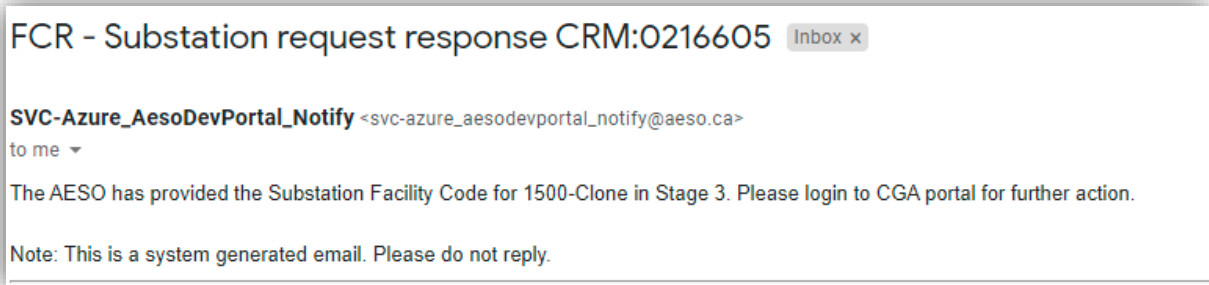
Bus Code:



Facility Code for Transmission Lines:



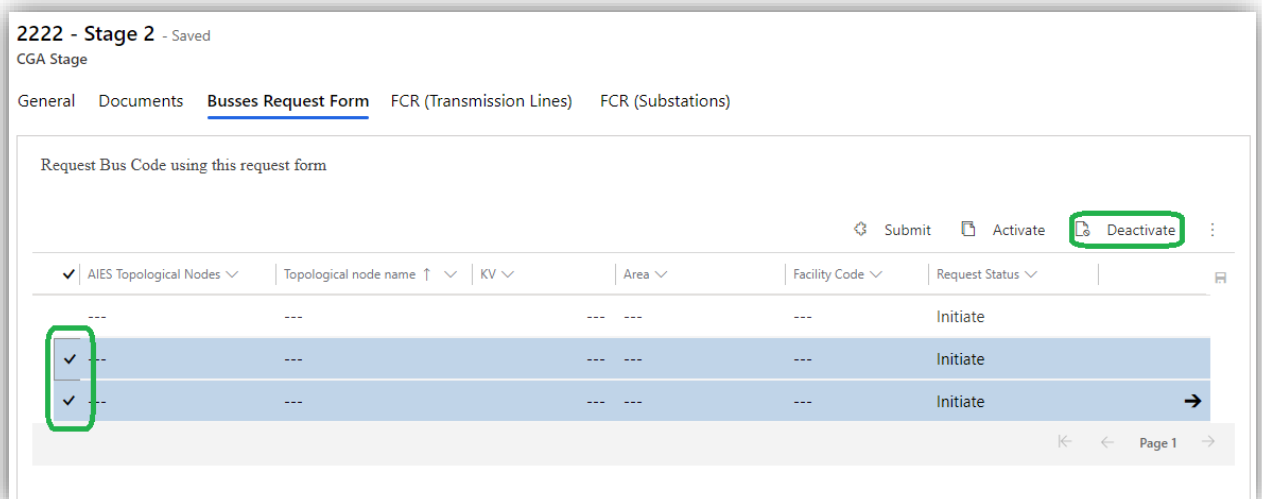
Facility Code for Substations:



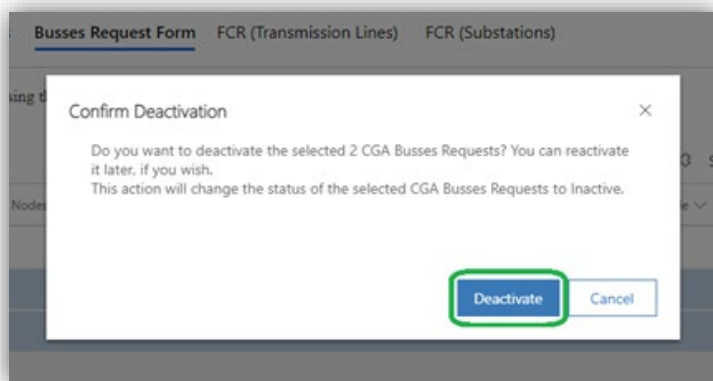
1.4. Remove Code Request

A code request can be removed before it is submitted to AESO. To do that,

1. Select the record to be removed and click 'Deactivate'.



2. Confirm the deactivation, which will remove the request.



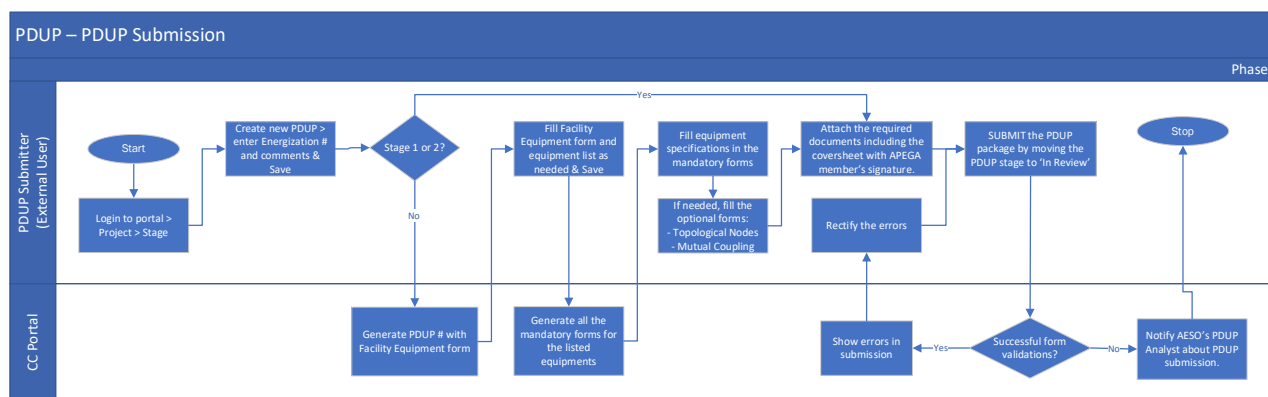
2. PDUP submission to AESO

An external user (TFOs, study consultant etc.) is responsible to create the data for PDUP submission in a stage of a project. Each PDUP goes through a business process flow:

Initiate > In Review > Accept > Close

Based on the stage of the project, the PDUP submission may or may not require data forms submissions.

PDUP submission types	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
PDUP Submission only with attached docs	Yes	Yes	Yes	Yes	Yes
PDUP Submission with data forms	No	No	Yes	Yes	Yes



2.1. Initiate PDUP data creation

2.1.1. General Tab

1. Open the project and then open the stage where PDUP needs to be submitted. The external user must take care that they create PDUP in the required stage as the system does not restrict any stage from PDUP creation.
2. Click '+New CGA PDUP Submission' that will open a new PDUP form

5000 - Stage 5 - Saved
CGA Stage

General Documents Busses Request Form FCR (Transmission Lines) FCR (Substations)

Request Bus or Facility Code using the request forms in adjacent tabs
FCR (Transmission Lines) = Facility Code Request for Transmission Line
FCR (Substations) = Facility Code Request for Substation

Project Number **5000** Stage Number **Stage 5**

PDUP Submissions + New CGA PDUP Subm... Refresh

Name ↑	Energization # ↓	Submission Date ↓	Acceptance Date ↓	Accepted Conditionally ↓	Request Status ↓
PDUP-5000-Stage 5-E12-01	12			No	Initiate
PDUP-5000-Stage 5-E444-01	444			No	Initiate
PDUP-5000-Stage 5-E678-01	678	4/21/2022		No	In-Review

1 - 3 of 3 Page 1

- Fill the fields under 'General' tab of the form and 'Save'. The PDUP business process flow will show in its INITIATE stage.

Save Save & Close Create ZIP

New CGA PDUP Submission - Unsaved 5000 - Stage 5

CGA PDUP Submission B... Active for less than one mi... Initiate (< 1 Min) In-Review Accept Close

General Documents Facility Equipment Zip Files

Energization # * 12

Author Comments **Clone test**

AESO Comments ---

Acceptance Comments ---

Submission Information

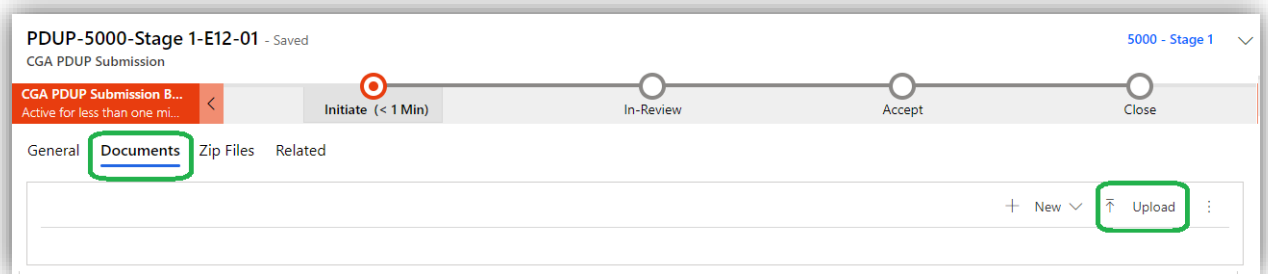
Created On	---	Created By	---
Modified On	---	Modified By	---
Submission Date	---	Submitted By	---

Field name	Mandatory	Description
Energization #	Yes	The serial number of the energization in the project. It must be unique value (1-99) within a stage.
Author Comments	No	Optional field, only for external user to enter their comments pertaining to the PDUP.
AESO Comments	No	Optional field, only for the AESO reviewers to enter their review comments.
Acceptance Comments	No	Optional field, only for the AESO reviewers to enter their review comments.

2.1.2. Upload document to the PDUP data

Users can upload any supporting documents to the PDUP. They must use this function to submit the APEGA member attested copy of the coversheet with their PDUP. User should sign, stamp, scan & then upload the document to the PDUP before submitting it to the AESO.

To upload, go to 'Document' tab and upload documents as needed.



2.1.3. PDUP data forms

PDUP data forms are required in stage 3, 4 and/or 5, depending on the project type.

- External users need to enter the list of Facility Equipment first which guides the generation of other dependent forms within PDUP as separate tabs. E.g., if a 'Generator' is entered in the equipment list, then these forms (tabs) will get generated in the PDUP – Generator Control (mandatory), Energy Source (mandatory), Dynamic Simulation Model (mandatory), Control System (optional).
- The user will need to populate further details in those dependent forms before making the submission.
- The mandatory dependent forms will have records created automatically for the equipment mentioned in the Facility Equipment list. User will not be able to add any new record there for an equipment that is not mentioned in the Facility Equipment list.
- The optional dependent forms will be empty. If needed, the external user will create records for the equipment in those forms. The user will be able to add or delete records in the form before submission to AESO.
- The mandatory fields and forms should be completed before making the submission.

The table below describes the forms that will get created based on the equipment entered in the Facility Equipment form.

Equipment	Equipment type	Control System Type	Mandatory forms	# of forms per equipment per control system type	Optional forms	# of forms per equipment per control system type
Generator	Generator DER	Generator	Generator Control Dynamic Sim Model Energy Source	1 1 1	Control system form	1 1
		Exciter			Dynamic Sim Model Control system	1 1
		Governor			Dynamic Sim Model Control system	1 1
		Stabalizer			Dynamic Sim Model Control system	1 1
		Generator Control			Dynamic Sim Model Control system	1 1
		Electrical Control			Dynamic Sim Model Control system	1 1
		Plant Control			Dynamic Sim Model Control system	1 1
		UVLS			Dynamic Sim Model Control system	1 1
		UFLS			Dynamic Sim Model Control system	1 1
		Other			Dynamic Sim Model Control system	1 1
Compensator	Series Compensator (static) Shunt Compensator (static) Reactor	Other	Compensator	1		
Compensator	SVC (Static Var Compensator)	Other	Compensator Dynamic Sim Model (only for SVC)	1 1		
Transformer	Auto 2-winding 3-winding		Transformer Auto 2-winding 3-winding	2 (A,A) 2 (P, S) 3 (P,S,T)		
Load	Static	n/a	Energy Consumers Elements to MP	1 1		
Load	Motor	Motor	Control system form Energy Consumers Elements to MP	1 1	Dynamic Sim Model	1
AC Line Segment	AC Line Segment		AC line segment Branches	1 1		
For all equip					Mutual Coupling Topological Nodes	any # any #

2.1.4. Enter data in Facility Equipment form

1. Click Facility Equipment tab.

PDUP-5000-Stage 5-E12-01 - Saved 5000 - Stage 5

CGA PDUP Submission B... Active for 9 hours

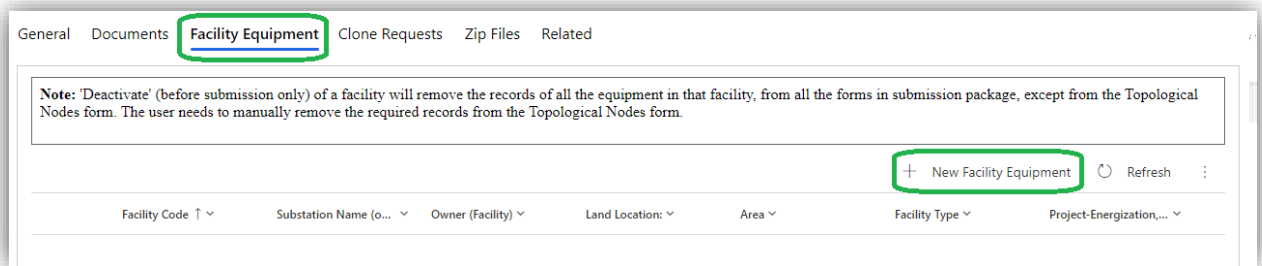
Initiate (9 Hrs) In-Review Accept Close

General Documents **Facility Equipment** Clone Requests Zip Files Related

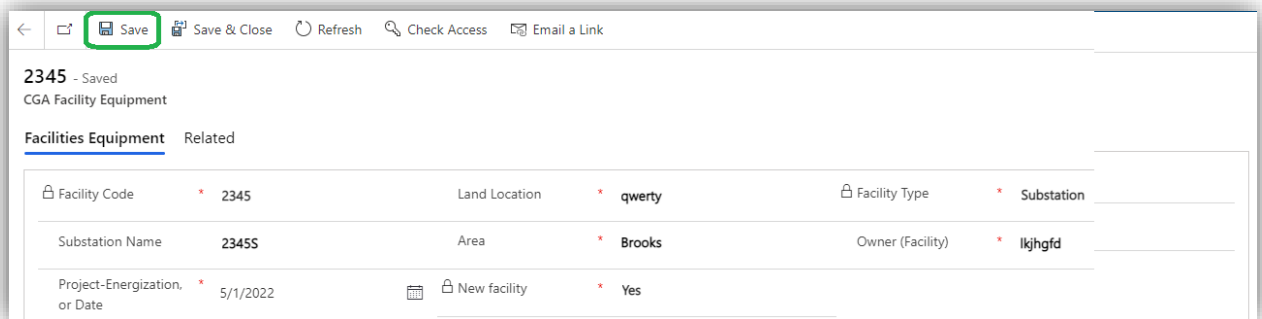
Energization # * 12

Author Comments clone test

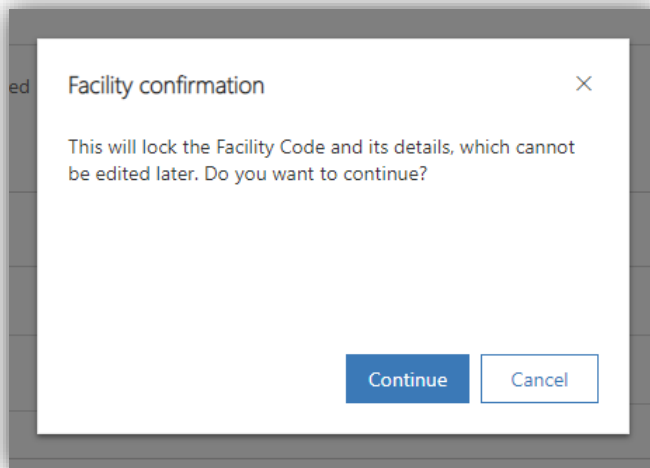
2. Click '+New Facility Equipment' to enter the facility details.



3. Save the Facility details by 'Save' or 'Save & Close' button.



4. The Facility code once entered cannot be changed, hence confirm the facility details are correct.



- After saving the facility details, sub-grid will appear below to add equipment list. Click 'New Equipment'. An empty equipment record will get created to allow for equipment details.

2345 - Saved
CGA Facility Equipment

Facilities Equipment Related

Facility Code * 2345 Land Location * qwerty Facility Type * Substation

Substation Name 23455 Area * Brooks Owner (Facility) * lkjhgf

Project-Energization, or Date * 5/1/2022 New facility * Yes

Note: 'Deactivate' (before submission only) of a facility will remove the records of all the equipment in that facility, from all the forms in submission package, except from the Topological Nodes form. The user needs to manually remove the required records from the Topological Nodes form.

New Equipment Refresh

Equipment	Equipment Type	Equipment Name	Normally Inservice	In/Out	Operated By (Equipm...)	Project-Energization, ...
---	---	---	No	In	---	---

- The record can be filled in using either the list view or the form view:
 - List view**, by one click under the column name. Fill rest of the fields and save.
 - Form view**, click on arrow or double click on the record to open the record in form view.

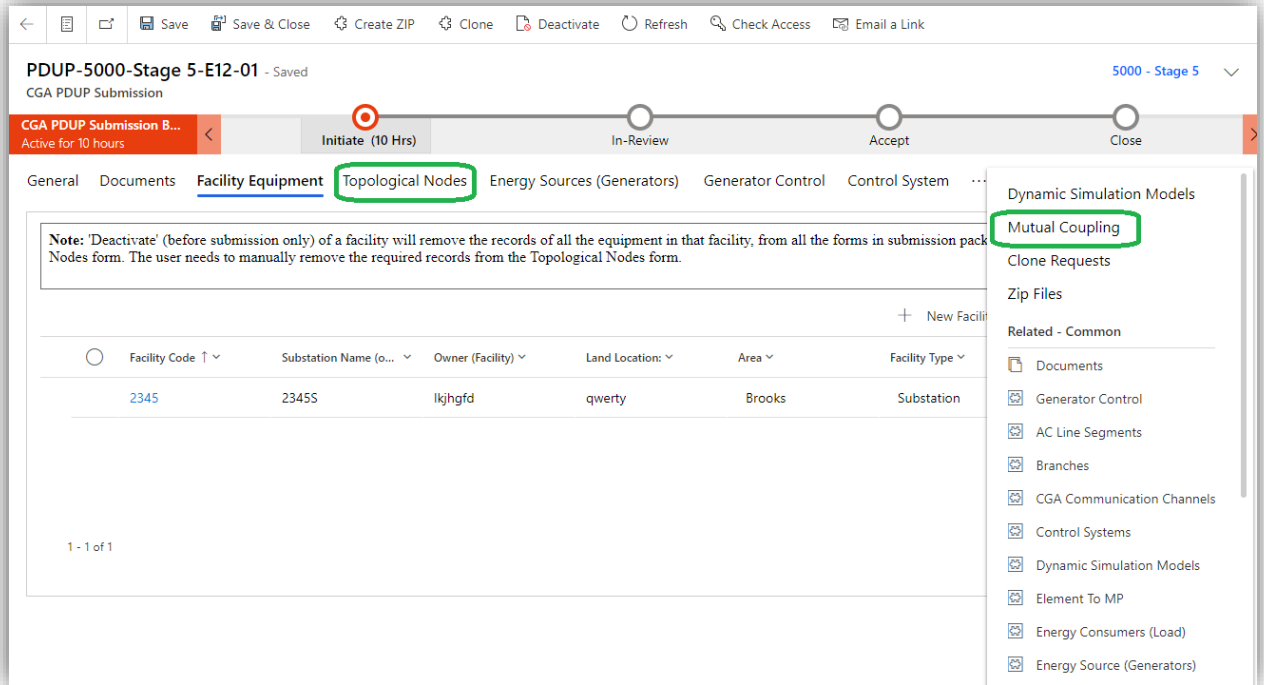
New Equipment Refresh

Equipment	Equipment Type	Equipment Name	Normally Inservice	In/Out	Operated By (Equipm...)	Project-Energization, ...
Generator	Generator	2345SG1	No	In	lkjhgf	5/1/2022

Page 1

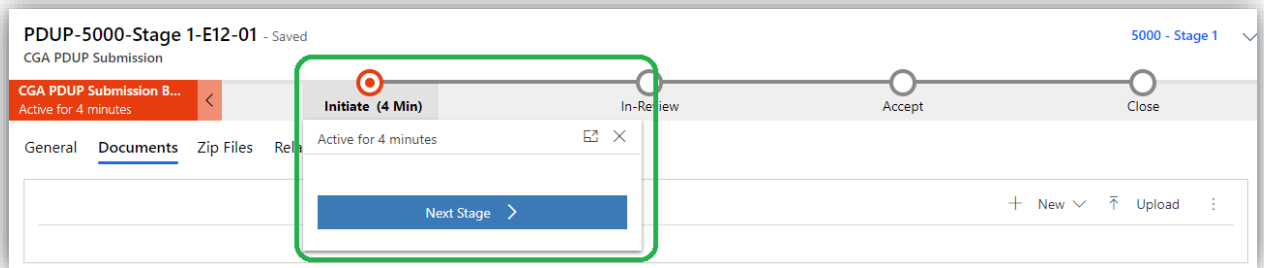
- Based on the equipment in the list, the mandatory dependent forms records will be created automatically. You will not be able to add any new record there for an equipment that is not mentioned in the Facility Equipment list.
- The optional dependent form tabs will also get created but the records will be empty. If needed, create records for the equipment in those forms. You will be able to add or delete records in the form before submission to AESO. The optional forms are:
 - Topological Nodes form
 - Mutual Coupling form
- Fill the forms that got generated – Mandatory as well as optional, if required

2.1.5. Fill out mandatory and optional dependent forms



2.2. Submit PDUP data for review

1. After the all the required forms are filled, submit the request to AESO by moving the stage from 'Initiate' to 'In-Review'



2. Confirm the PDUP submission as the user cannot make any changes to the PDUP data after it moves to 'In-REVIEW' stage.
3. The submission will generate email notification for the AESO reviewers who will review the submission.

2.3. Accept PDUP data submission

If the data submission meets the PDUP requirements, then the AESO reviewer will move the PDUP stage forward to 'ACCEPT'.

2.4. Re-open PDUP for correction

In case of deficiencies are found, then the reviewer will contact the external user via communication channel or other means and if needed, can choose to move the PDUP stage back to 'INITIATE' i.e., re-open the case for the external user to make corrections.

Note: Please refer to 'User Guide for Communication Channel' on how to use it.

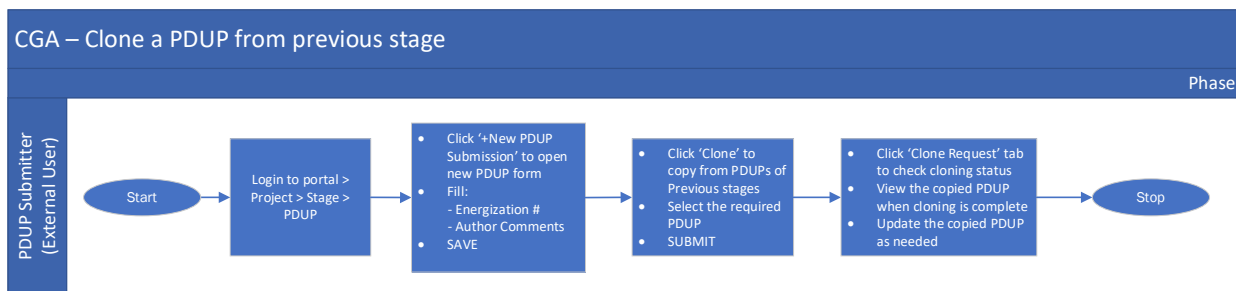
2.5. Close PDUP data submission

After PDUP submission is accepted by AESO then reviewer will move it forward to 'Close'. Once closed, no changes can be made to that PDUP submission.

3. Clone PDUP data forms

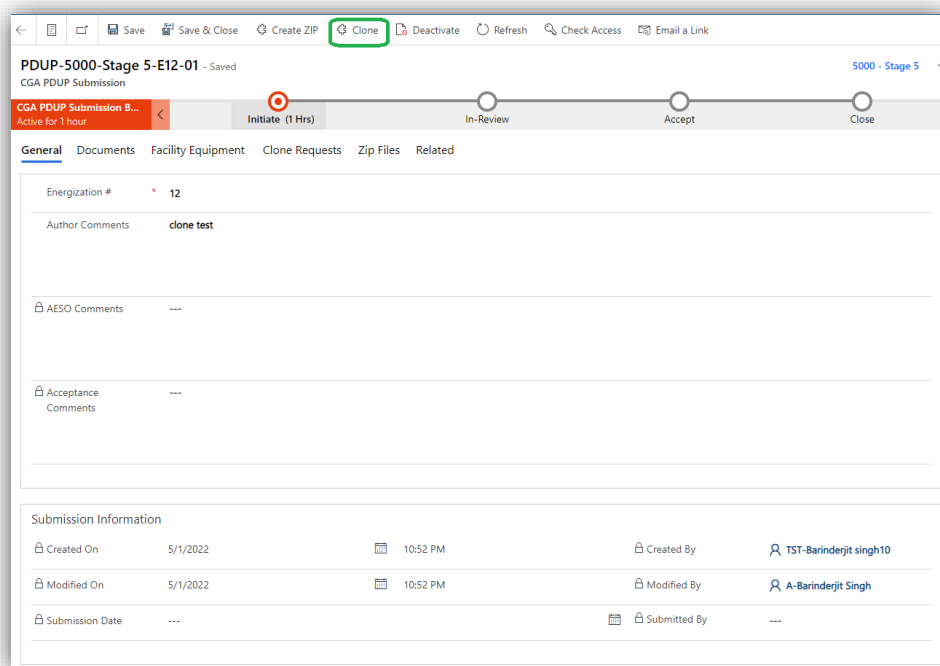
External users (PDUP submitter) can clone (or copy) PDUP data forms from previous stages to latter stages. It's helpful when the PDUP data for an equipment hasn't changed much from the previous stage and can be used in latter stages too with minimal updates by the external user.

- A PDUP can be cloned from,
 - Stage 3 to stage 4/ stage 5
 - Stage 4 to stage 5
- Multiple PDUP submissions of previous stages can be copied into one PDUP of latter stage.
- A PDUP can only be cloned once, it cannot be copied into multiple PDUPs within a stage.
- The PDUP energization no. of the destination PDUP can be different than the source PDUP.

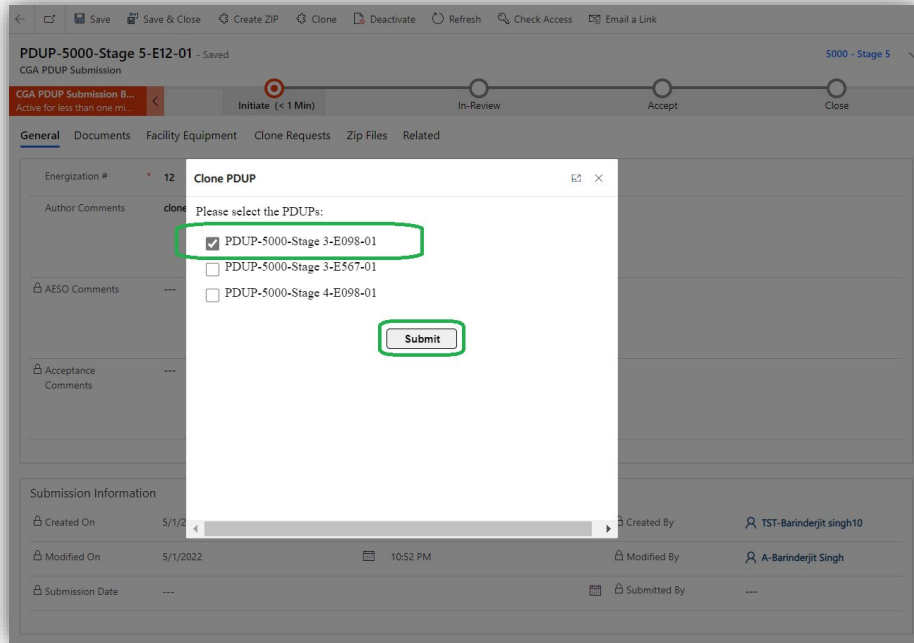


To clone a PDUP from one stage to another:

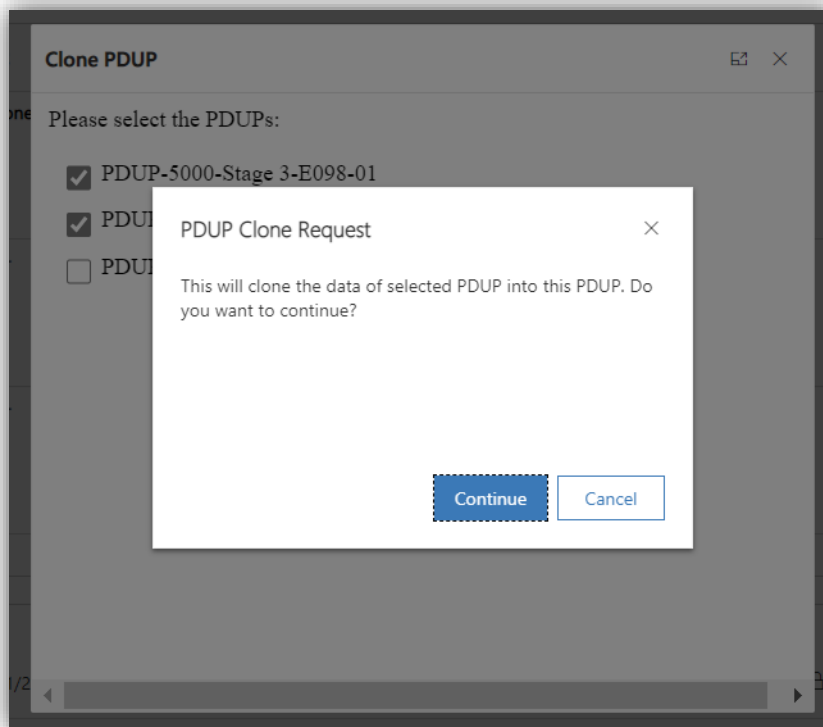
1. Create a new PDUP where the data forms will be copied over from previous stage. Follow the same steps as mentioned in section 2.1.1.
2. After PDUP is created, click the 'Clone' button on top of the PDUP page.



- List of PDUPs from previous stages will appear as options. Select the PDUP (one or more) to be copied and SUBMIT.



- Confirm your cloning request



- Cloning process may take some time to complete. User can view the cloning status by clicking 'Clone Request' Tab in the PDUP

PDUP-5000-Stage 5-E12-01 - Saved
CGA PDUP Submission

5000 - Stage 5

CGA PDUP Submission B... Active for 17 minutes

Initiate (17 Min) In-Review Accept Close

General Documents Facility Equipment **Clone Requests** Zip Files Related

Refresh See associated records

PDUP To Be Cloned ↑ ↓	Created On ↓	Request Status ↓	Error Detail ↓
PDUP-5000-Stage 3-E098-01	5/1/2022 11:08 PM	Pending	

General Documents Facility Equipment Topological Nodes Transformers **Clone Requests** Zip Files Related

Refresh See associated records

PDUP To Be Cloned ↑ ↓	Created On ↓	Request Status ↓	Error Detail ↓
PDUP-1800-Stage 3-E10...	5/4/2022 3:57 PM	Pending	
PDUP-1800-Stage 3-E11...	5/4/2022 3:57 PM	Pending	

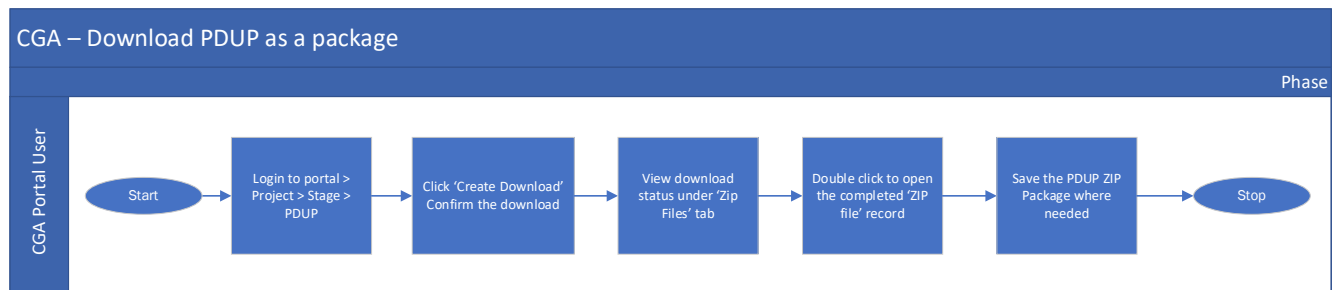
- The data forms will get added to the PDUP after the cloning job is complete (Status = Complete).
- User shall then make changes to the forms as required before making submissions.

Note: Clone function can only copy the data forms, not the attachments to the PDUP.

4. Download PDUP data

Any Customer Connections portal user can download a PDUP package from the portal.

- The download can be done at any stage of the PDUP business process flow.
- The downloaded PDUP package will contain all the forms and document attachments that are visible to the user and are part of the PDUP package at the time of download.
- The PDUP package always gets downloaded to the 'Downloads' folder of the user. Users can move the folder after the download is complete.
- All the PDUP forms are downloaded into separate PDF documents. Any attachment to the PDUP is downloaded in their native file format.



To download a PDUP

1. Open the required PDUP that needs to be downloaded.

5000 - Stage 5 - Saved
CGA Stage

General Documents Busses Request Form FCR (Transmission Lines) FCR (Substations)

Request Bus or Facility Code using the request forms in adjacent tabs
FCR (Transmission Lines) = Facility Code Request for Transmission Line
FCR (Substations) = Facility Code Request for Substation

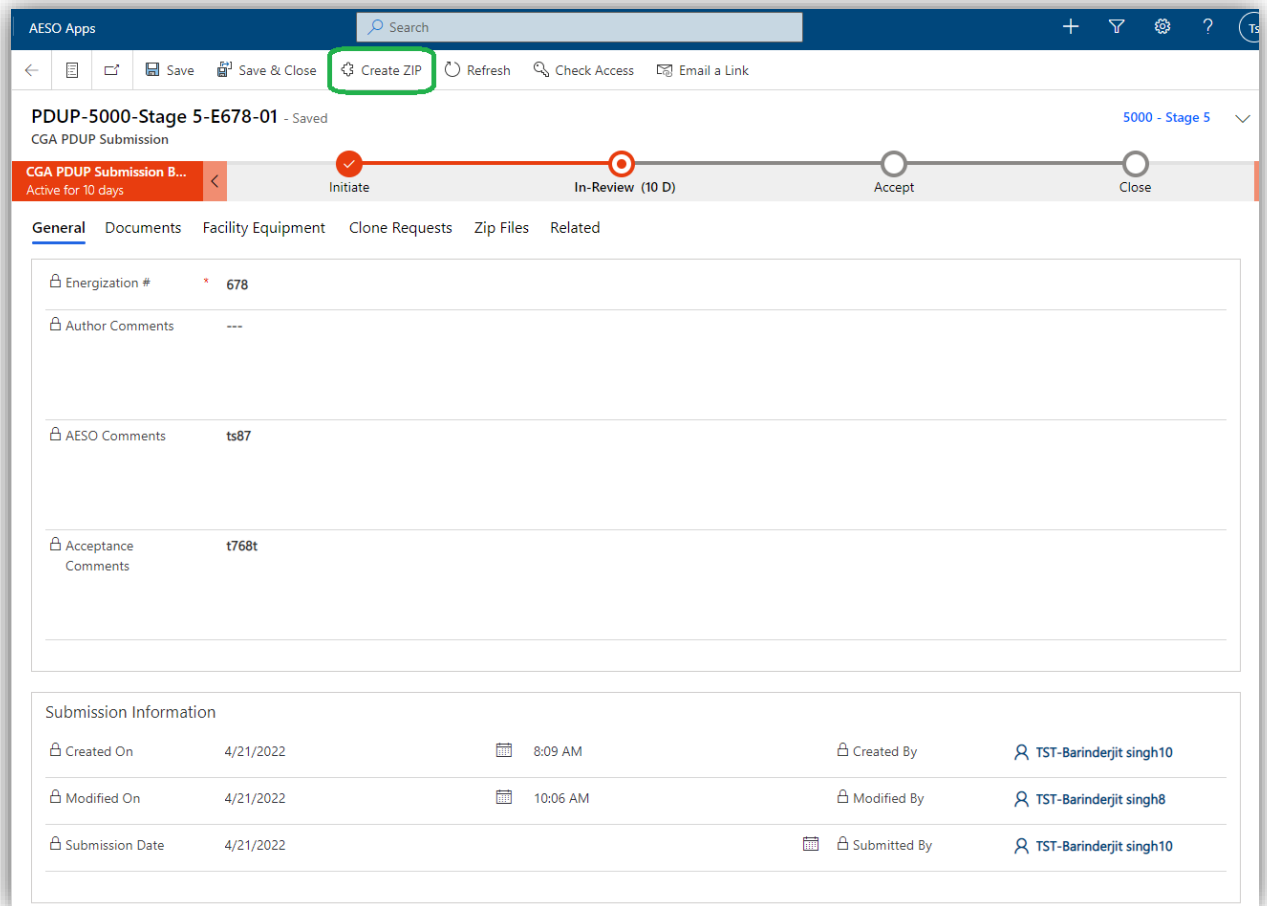
Project Number 5000 Stage Number Stage 5

PDUP Submissions + New CGA PDUP Subm... Refresh

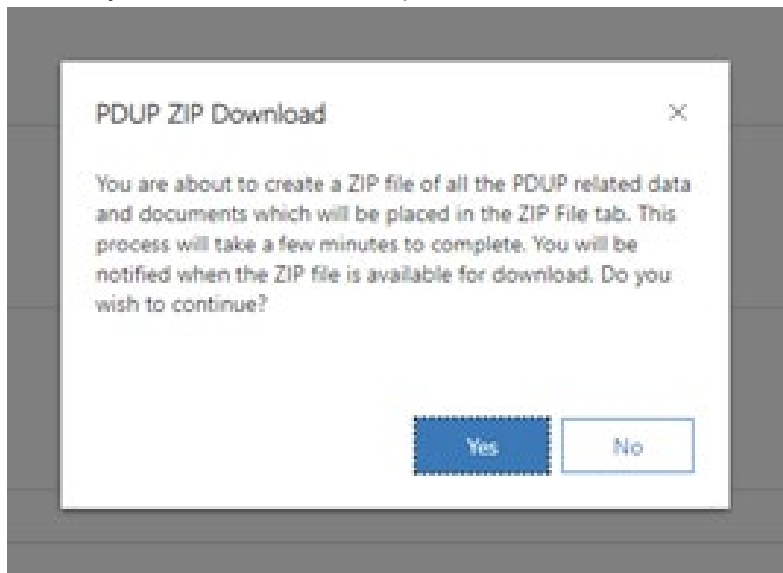
Name	Energyization #	Submission Date	Acceptance Date	Accepted Conditionally	Request Status
PDUP-5000-Stage 5-E444-01	444			No	Initiate
PDUP-5000-Stage 5-E678-01	678	4/21/2022		No	In-Review

1 - 2 of 2 Page 1

- Click 'Create ZIP' button on top of the PDUP page.



- Confirm your PDUP download request



- Download process may take some time to complete. User can view the download status by clicking 'Zip Files' Tab in the PDUP

PDUP-5000-Stage 5-E678-01 - Saved
CGA PDUP Submission

5000 - Stage 5

CGA PDUP Submission B... Active for 10 days

Initiate In-Review (10 D) Accept Close

General Documents Facility Equipment Clone Requests **Zip Files** Related

Energization # * 678

Author Comments ---

AESO Comments ts87

Acceptance Comments t768t

Submission Information

Created On	4/21/2022	8:09 AM	Created By	TST-Barinderjit singh10
Modified On	4/21/2022	10:06 AM	Modified By	TST-Barinderjit singh8
Submission Date	4/21/2022		Submitted By	TST-Barinderjit singh10

PDUP-5000-Stage 5-E678-01 - Saved
CGA PDUP Submission

5000 - Stage 5

CGA PDUP Submission B... Active for 10 days

Initiate In-Review (10 D) Accept Close

General Documents Facility Equipment Clone Requests **Zip Files** Related

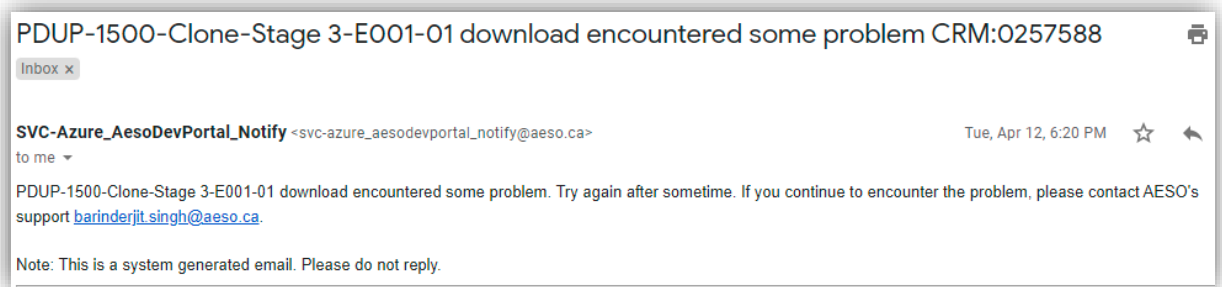
Refresh See associated records

Initiated On	Completed On	Download Status
5/1/2022 8:22 AM		Pending

- Once the download process is successfully completed, a notification is sent; only to the person who initiated the download. They can then login to the portal to fetch the zip folder.



6. If the download process fails, a notification is sent; only to the person who initiated the download.



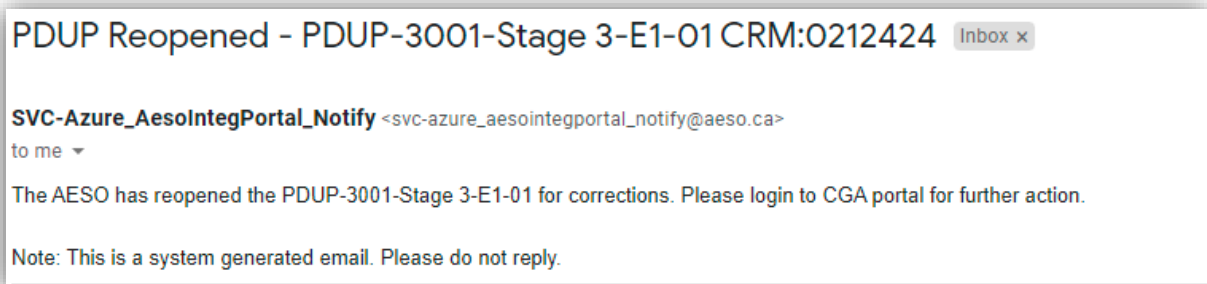
5. Notifications to external user

Email notifications are generated for the portal users based on certain triggers within the Customer Connection processes. The notifications are either sent to the whole team or an individual user. Here are the triggers that initiate notifications for External Users when working with the Customer Connections Portal for PDUP submission.

Triggers	Notification to
Bus or Facility code request is completed by AESO	External User's Team
PDUP reopened by AESO for corrections by external user	External User's Team
When the download initiated by a user is complete	Only the user who initiated the download
Communication sent by any AESO user to the external user	External User's Team

5.1. Email Notification Sample

5.1.1. PDUP Re-opened



6. Appendix

6.1. Abbreviations

- AESO – Alberta Electric System Operator
- CGA – Customer Grid Access
- PDUP – Project Data Update Package
- PM – Project Manager

6.2. AESO Contact

Users can contact customer.connections@aeso.ca for any questions about this user guide, or support needed in using the portal.

6.3. Portal Sign-Up or Sign-In Portal URL

- <https://aeso-portal.powerappsportals.com/>

6.4. Email Notifications

To receive timely notifications, the portal users shall take care that the emails from following senders are not marked as spam.

- svc-azure_aesoportal_notify@aeso.ca.

7. Revision History

Revision	Date	Comments
1.0	Dec 06, 2022	Initial version