

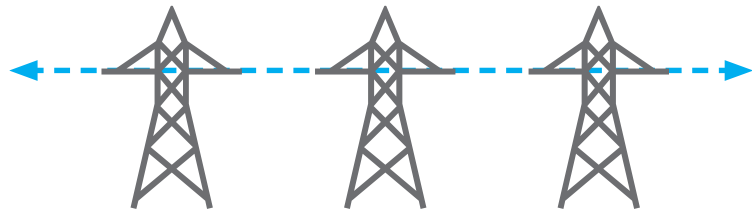
# From Proposal to Reality: A PLS-GRID Story

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*ITC Holdings*

Jesse Kohler, P.E.  
*PLC Engineering*

# Who is ITC?

**~16,000 MILES**  
of transmission lines



**34.5kV - 345kV**



# AGENDA

Why PLS-GRID?

What does it take to make the transition?

What's next? & Questions

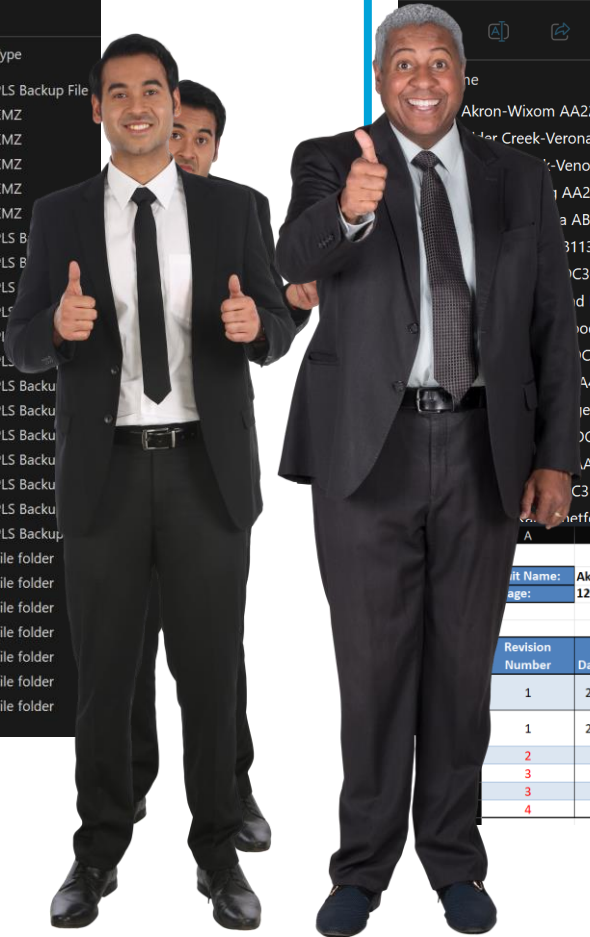
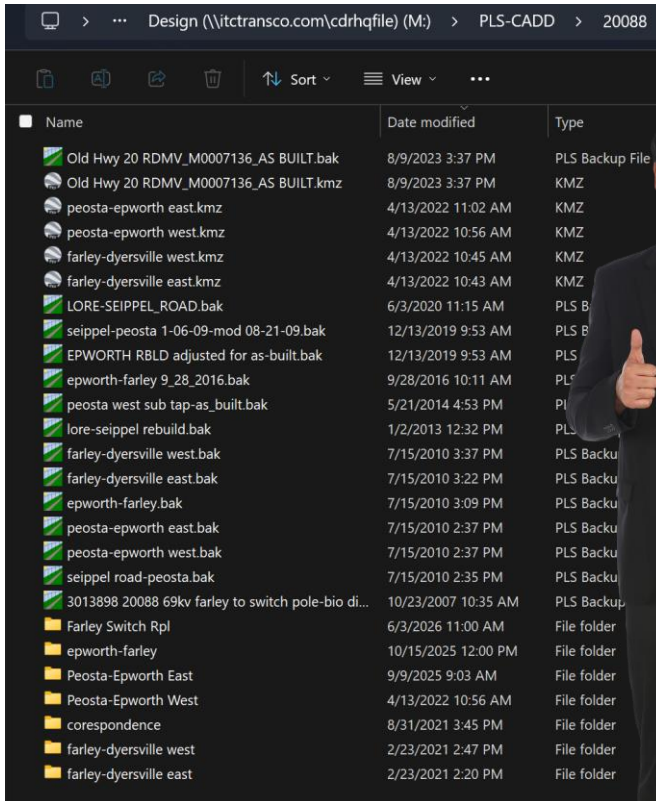
Tips/tricks for uploading models w/ Jesse



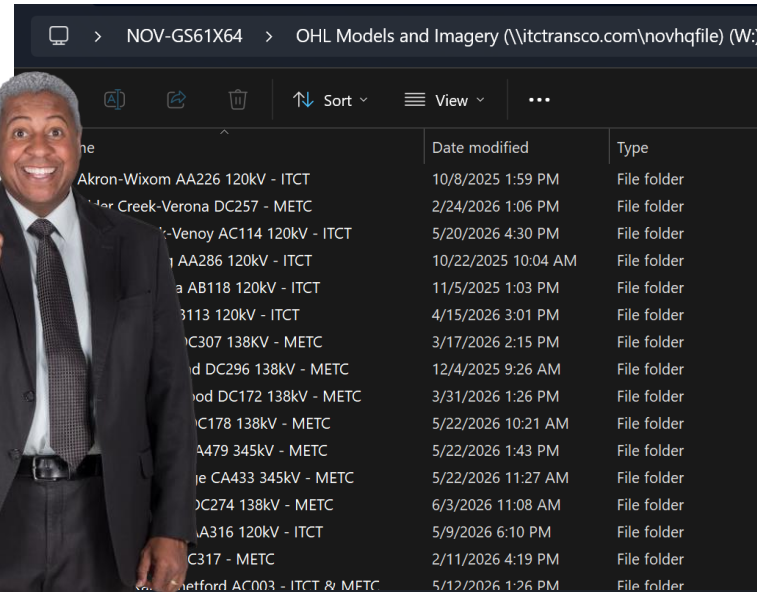
# Why PLS-GRID?

# Unify Processes

## Iowa Office



## Michigan Office



ITC PLS-CADD Modification Tracking Sheet										
Project Name: Akron-Wixom AA226 120kV										
Revision Number	Date Revised	ITC Engineer	Affected Span		Modifying Party		Model Update Details		Project	Detailed Description of Modification
			From	To	ITC	Other	Model Change	Annotation		
1	2/24/2021	CCC	11302	11304	X		X		A0003556	REVISION 1 RESERVED FOR 2014 WOOD POLE REPLACEMENTS: REPLACEMENT OF #11303. PLEASE COORDINATE WITH ENGINEER PRIOR TO MODEL UPDATE.
1	2/24/2021	CCC	11303	11305	X		X		A0003556	REVISION 1 RESERVED FOR 2014 WOOD POLE REPLACEMENTS: REPLACEMENT OF #11304. PLEASE COORDINATE WITH ENGINEER PRIOR TO MODEL UPDATE.
2		CCC	11304	11306	X		X		A0005204	Replace STR 11305 per WPR.
3		PIC/BV	11322	11319	X		X		A0005204	Replace Str 11320A with STHDE 40'/H2 (x3) placed 2' South of existing per METC5-28090-M
3		PIC/BV	11323	11320A	X		X		A0005204	Replace Str 11322 with STHPO 45'/H2 (x3) placed 2' East of existing per METC5-26874-M
4		BNK/PIC	11333	11335		X		X	ITC-CU-695	NEEDS ANNOTATION - STR. 11334: DTE DECOMMISSIONING AND REMOVING SPRINT ANTENNA EQUIPMENT.

# Document Control

Project Manager Reviewer [CPID 4ce0:29747114]

Project Name: Bad\_Axe-Wyatt\_#1\_AA337\_120kV\_ITCT\_RECORC < Prev 4 Next >  Only show milestones  
\* = Have revision

Revision Details  
User: rwright01@itctransco.com Number of Files: 667  
Date: 1:09:18 PM 4/14/2026 Project Size: 752 MB  
Comment: A0005204 - 04/14/26 - Wood Pole Replacement

Project Preview

Revision Report  
PLS-CADD Version 20.01x64 10:20:19 AM Tuesday, April 14, 2026  
ITC Holdings  
Project Name: 'C:\Bad\_Axe-Wyatt\_#1\_AA337\_120kV\_ITCT\_RECORC.bak'  
Project saved to "C:\Bad\_Axe-Wyatt\_#1\_AA337\_120kV\_ITCT\_RECORC.bak"  
Revisions (New Value, Old Value)  
Transmission Lines  
Line 13 "Bad\_Axe-Cosmo-Wyatt - Rev 11 ITC-CU-815DTE" has been added  
Line Display Options  
Display (No, Yes)  
Total of 1 Line 13 "Bad\_Axe-Cosmo-Wyatt - Rev 11 ITC-CU-815DTE" differences  
Line 14 "Bad\_Axe-Cosmo-Wyatt - Rev 12: Wood Pole Replacement" has been added  
Total of 2 Transmission Lines differences  
Drafting  
Survey Data Display Options  
Additional Display Options  
Draw only designated feature codes (No, Yes)  
Total of 1 Drafting difference  
Total of 3 Project differences  
Project saved to "C:\Bad\_Axe-Wyatt\_#1\_AA337\_120kV\_ITCT\_RECORC.bak"  
Revisions (New Value, Old Value)  
Criteria  
Weather Criteria  
Case "NESC Heavy (250B)" has been added  
Case "Extreme Wind (250C)" has been added  
Case "Concurrent Ice/Wind (250D)" has been added  
Case "Extreme Ice" has been added

Batch Update File List Diff No Pending Files

Revision Report Revision History Copy Grid Link OK

- Model check out/check in
- Automatic revisioning
  - Records user & date
  - Required comment
- Set user permissions

## Ultimate Librarian

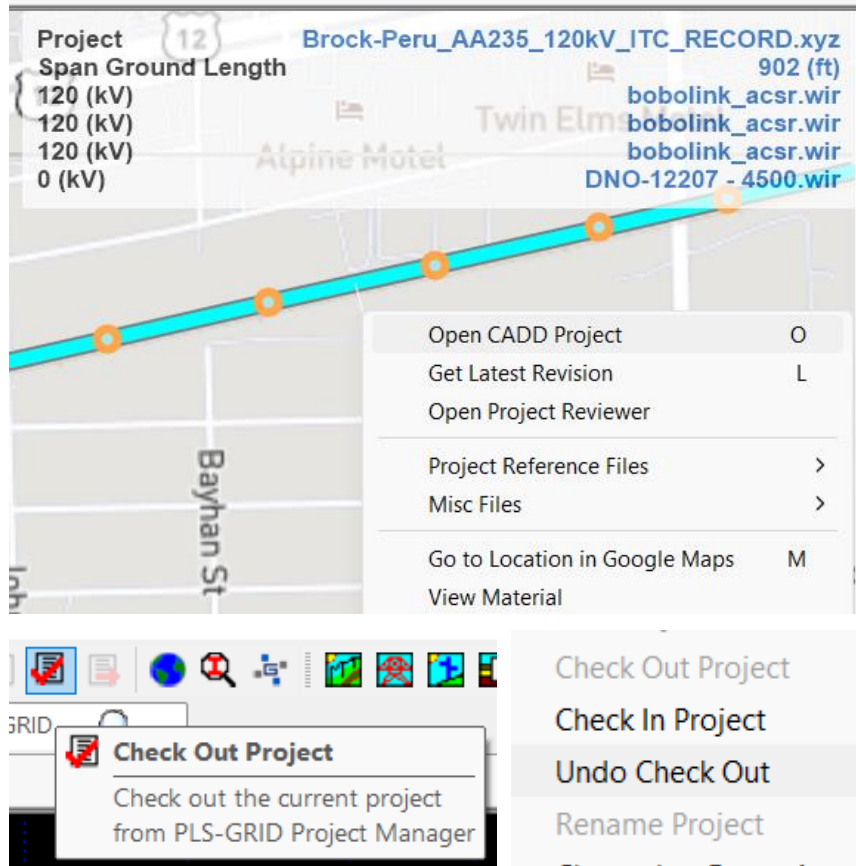


Revision History

Revision	User	Date	Machine	Milestone Label	Comment
1	0jkohler@itctransco.com	11:51:10 AM 12/30/2025			Batch add from 'C:\Users\jkohler\Downloads\Bauer-Grassmere_#1_CA170_345kV_ITCT\Bad_Axe-Wyatt_#1_AA337_120kV_ITCT.bak'
2	1jkohler@itctransco.com	3:51:40 PM 12/30/2025			Renamed project from 'Bad_Axe-Wyatt_#1_AA337_120kV_ITCT' to 'Bad_Axe-Wyatt_#1_AA337_120kV_ITCT_RECORC'.
3	2jkohler@itctransco.com	3:52:45 PM 12/30/2025			Added tracking sheet to reference manager.
4	3JGruca@itctransco.com	7:45:27 AM 2/24/2026			Rev 11 (2/24/2026) Annotation added for ITC-CU-815DTE to remove existing OH line between Structure #6306 and #6307 to cro.
5	4wright01@itctransco.com	1:09:18 PM 4/14/2026			A0005204 - 04/14/26 - Wood Pole Replacement

Done

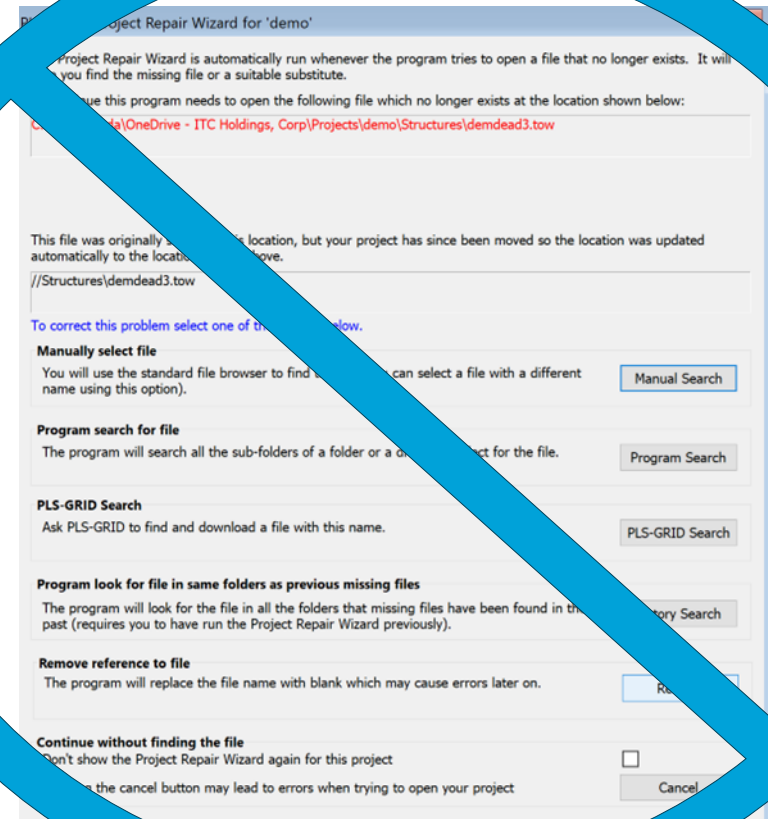
# Makes PLS Approachable



- Very little training needed
  - Quick onboarding & permission controls
  - Intuitive interface
  - File management? No worries!
- Fewer backups/restores
  - Only needed to share outside ITC
  - Quick restore is okay now!
- Models open “read-only” by default
- “Undo checkout” option

# Newfound Trust & Confidence

- Less intimidating for infrequent PLS users
  - Confidence to make needed changes
  - Curiosity/excitement to learn more
- Eliminates risk of:
  - Overwriting files
  - Missing references
  - Disorganized folder directories
- See who changed what & when
- Easily revert to past revisions



# Improved Efficiency

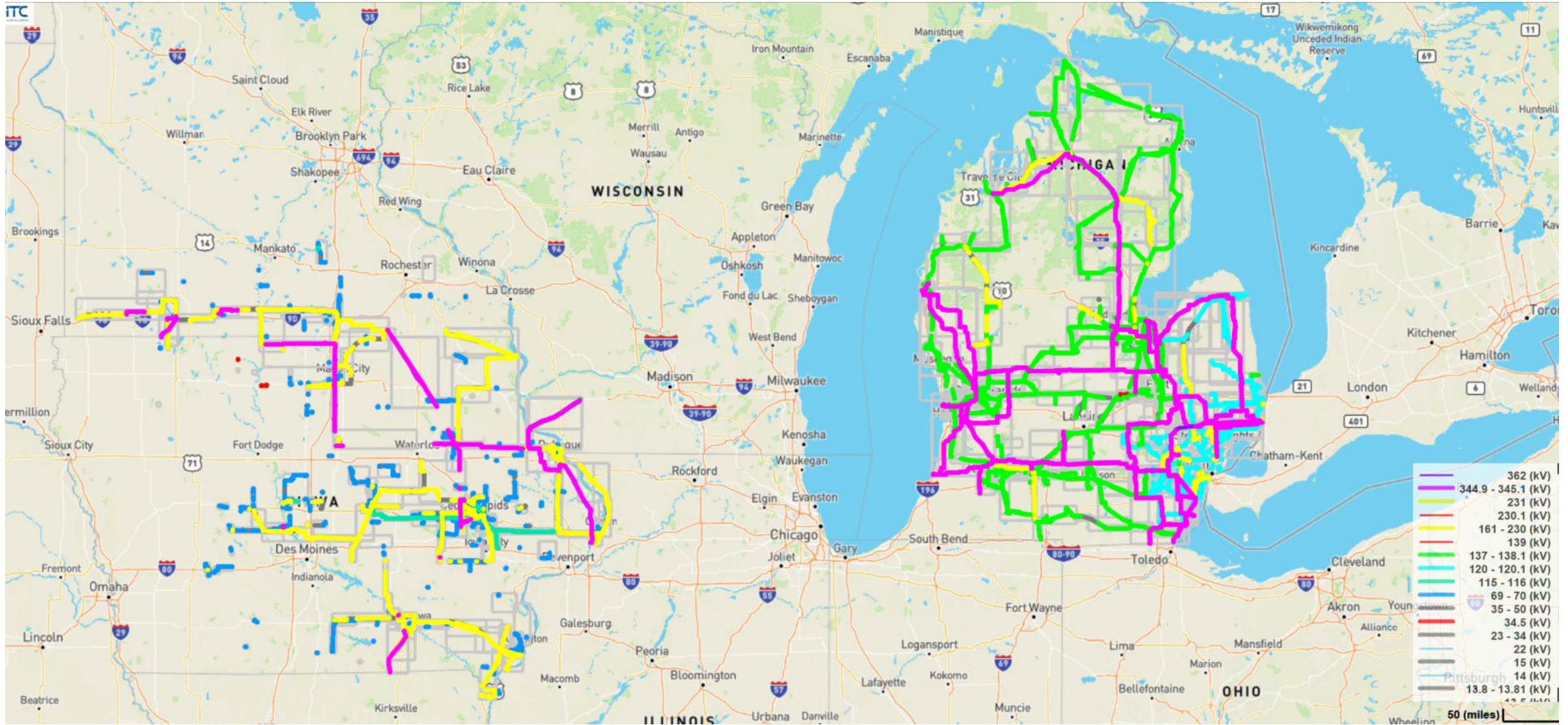
The screenshot displays the 'Project Manager Discovery' application. On the left, the 'Find Projects' section includes search filters for Project Type, By User (JGruca@itctransco.com), (Start) Creation (1/ 1/2020), and (End) Creation Date (6/ 6/2026). Below these are checkboxes for Workspace Projects, Template Projects, Favorites, and a Group dropdown. A 'Find Projects' button is at the bottom right of this section. On the right, the 'Project Preview' area shows a 3D wireframe model of a structure. Below the preview is a 'Key for Workspace Projects' with color-coded labels: Latest (blue), Outdated (orange), and Workspace Conflict (red). The main 'Results' section is a table with columns: Project Name, Project Creation, Works..., Lates..., Revi..., Revision Date, Revision Co..., Check Out By, Check Out M..., and Project CPID. The table lists numerous projects, with 'Golf-Kings Point\_AC163\_120KV...' highlighted in blue. At the bottom of the window are buttons for 'Open in PM Reviewer', 'Zoom to in GRID View', 'Show Results in GRID View', 'Workspace Report', 'Report', and 'OK'.

Project Name	Project Creation	Works...	Lates...	Revi...	Revision Date	Revision Co...	Check Out By	Check Out M...	Project CPID
Brownstown-Wayne_#2_CA104...	4:20:53 PM 3/...	1			9:09:25 AM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce01d130528
Boyer-Kings Point_AC157_120...	1:18:50 PM 4/...	0			1:19:09 PM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce07e0d1e...
Golf-Kings Point_AC163_120KV...	1:23:09 PM 4/...	0			1:23:27 PM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce0668246d
Majestic-Tompkins_Part 2_CA...	3:22:13 PM 4/...	0			3:22:30 PM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce08442017
Majestic-Oneida_Part 3_CA012...	2:57:51 PM 4/...	0			2:58:10 PM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce06e4e41...
Majestic-Oneida_Part 2_CA012...	2:55:38 PM 4/...	0			2:55:57 PM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce06e4e41...
Majestic-Oneida_Part 1_CA012...	2:53:16 PM 4/...	0			2:53:34 PM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce06e4e41...
Majestic-Tompkins_Part 1_CA...	3:19:51 PM 4/...	0			3:20:10 PM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce0b442017
Bullock-Shale_DA145_138kV...	3:04:45 PM 5/...	0			3:05:11 PM 5/...		JGruca@itctransco.com	NOV-9S61X64	4ce0654c5759
Higgins-Shadow_DB165_138k...	1:43:09 PM 4/...	0			1:43:29 PM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce0612f4826
Brownstown-Monroe_#1_CA131...	1:47:34 PM 4/...	0			1:47:54 PM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce0105c356f
Lincoln-Northeast-Northwest_A...	3:01:58 PM 4/...	0			3:06:47 PM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce05e752c01
Marquette-Bingham_DB244_13...	10:00:04 AM ...	0			10:02:52 AM ...		JGruca@itctransco.com	NOV-9S61X64	4ce0253d77...
Argenta-Tompkins_Part 3_CA4...	12:52:56 PM ...	0			12:53:14 PM ...		JGruca@itctransco.com	NOV-9S61X64	4ce0260a63...
Argenta-Tompkins_Part 2_CA4...	12:50:05 PM ...	0			12:50:23 PM ...		JGruca@itctransco.com	NOV-9S61X64	4ce0270a63...
Argenta-Tompkins_Part 1_CA4...	12:35:52 PM ...	0			12:36:11 PM ...		JGruca@itctransco.com	NOV-9S61X64	4ce02206615b
Churchill-Churchill_Tap_DC130...	2:04:50 PM 4/...	0			2:05:09 PM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce0324f2e16
Argenta-Tompkins_Part 4_CA4...	12:55:28 PM ...	0			12:55:46 PM ...		JGruca@itctransco.com	NOV-9S61X64	4ce0210a63...
Blendon-Tyler_DC360_138kV...	1:13:44 PM 4/...	1			3:07:56 PM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce01f582b2f
Brownstown-Monroe_#2_CA10...	1:03:22 PM 1...	0			8:33:03 AM 5/...		JGruca@itctransco.com	NOV-9S61X64	4ce0391e00...
Bard Rd-Shadow_DB160_138k...	1:00:55 PM 4/...	0			1:01:14 PM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce03e77426f
Golf-Macomb_#2_AA342_120k...	1:25:46 PM 4/...	0			1:26:04 PM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce03b7d01...
Majestic-Tompkins_CA005_34...	3:11:44 PM 4/...	0			3:12:03 PM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce07c114b5d
Battle Creek-Oneida_CA432_3...	1:07:23 PM 4/...	0			1:07:41 PM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce0422c4c5d
Majestic-Oneida_CA012_345k...	2:41:11 PM 4/...	0			2:41:30 PM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce04551157d
Delhi-Tompkins_#2_DC130_13...	2:08:38 PM 4/...	0			2:08:58 PM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce04a022328
Brownstown-Wayne-Cannoli_C...	1:14:03 PM 1...	1			9:01:25 AM 4/...		JGruca@itctransco.com	NOV-9S61X64	4ce01815042e

- Find the right models faster
  - View models in a map or table
  - Easily search by general data
  - Jump to structure #'s
- See what's in a model without opening
- Models load faster
  - Data deduplication
  - Workspace directory on C:\
- See all your checked out models in one place



# What does it take to make the transition?



# Timeline

APR 2024

- Purchased license
- Sent IT request for server

OCT 2024

- Server online
- Kick-off meeting

OCT 2025

- Began engaging support staff/consultants
- Uploading active models

JUN 2026

- 1600+ models on GRID
- Departmental use on 70+ projects

AUG 2024

- PLC onboarded

FEB 2025

- First model uploaded to GRID!

APR 2026

- Released procedure
- Training & webinar series

# The Plan

## Phase 1 NERC Alert

- Historic reference models locked as read-only
- Easy to upload, no coordination needed

## Phase 2 Iowa GRID Transition Models

- Partial models, uploaded as-is and cleaned in Phase 4
- No coordination needed

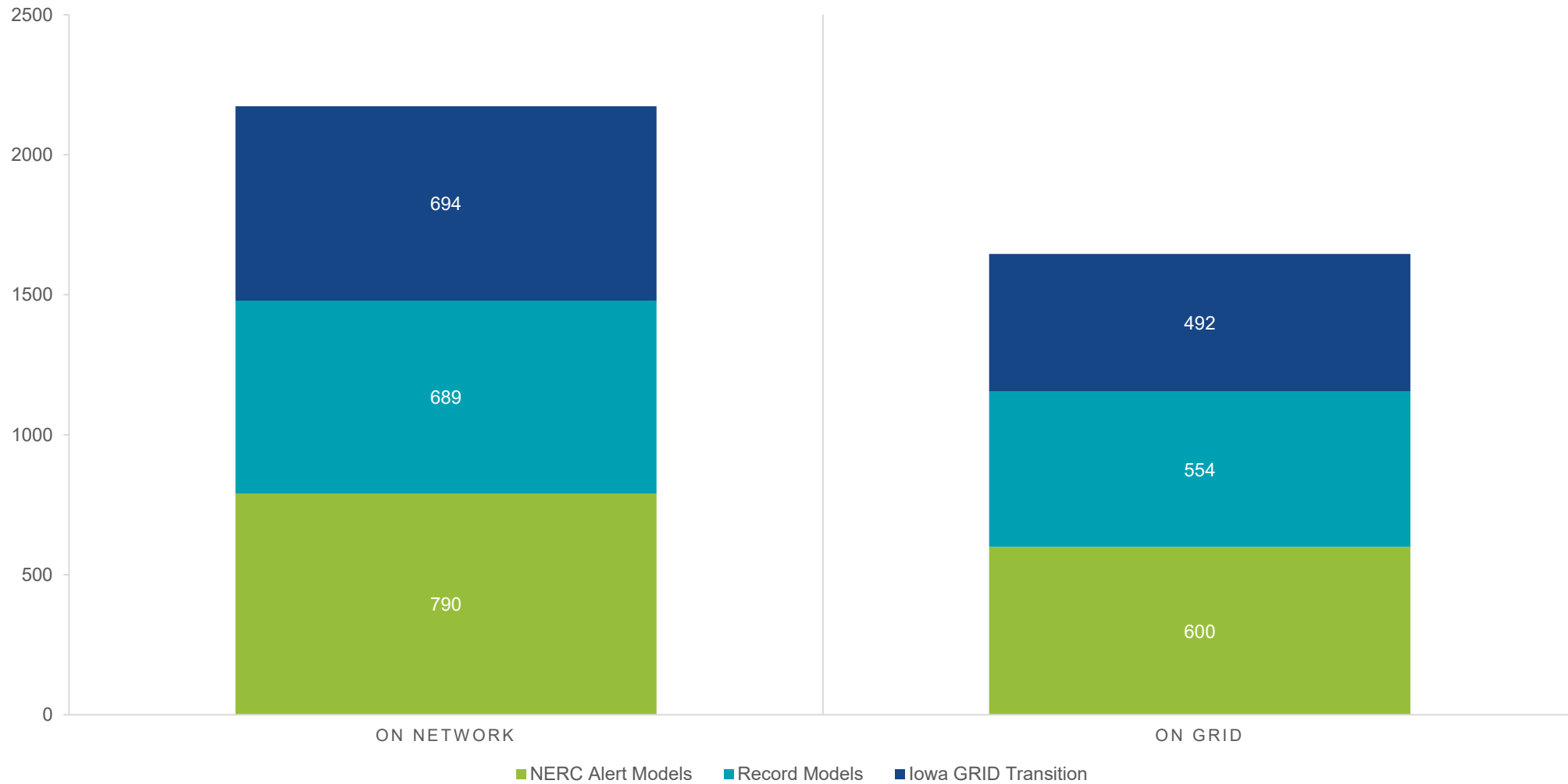
## Phase 3 Record Models

- Actively used on projects currently
- Heavy coordination needed with design team

## Phase 4 Archive

- Final clean-up of phase 2 models
- Future use for archiving models in GRID

# Statistics



# Advice for Others

- Understand your models, organization, **and** GRID
- Make a plan & collect feedback *first*
  - ITC's plan became groups in GRID
- Set goals early
  - Know # of models up front
  - Check off as you go, monitor progress often
- Don't bite off more than you can chew
  - Low hanging fruit (consistent model naming, general data)
- Detailed training & procedures specific to your organization



# What's Next?

# Future of GRID at ITC

## Build out PLS standards for GRID

- Project seed files
- Procedure for consistent modeling inputs
  - Material, structure comments, labels, etc.
- Reporting features in Web View
  - Engage other departments (supply chain, field)

## Implementation of design rules

- Making model checks easier

## Future software improvements

- Default group filtering in desktop view

# Questions?

Up  
Next...

Tips & Tricks for Uploading  
Models w/ Jesse

