

National Grid

Outage Management System Overview

June 9, 2009

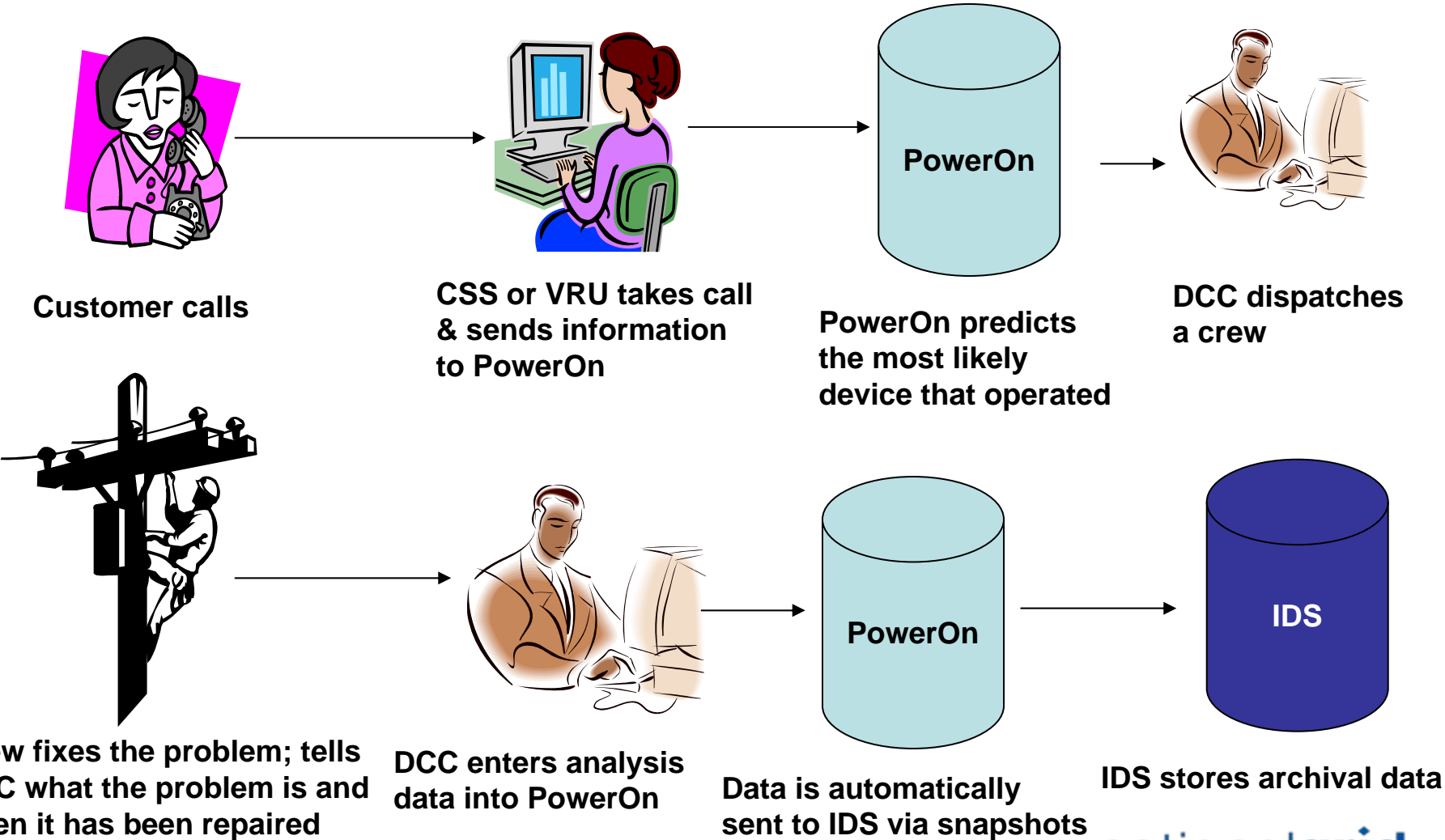
PowerOn Outage Management Applications

- ◆ PowerOn suite of Outage Management programs developed by General Electric; used in NE since June of 2007
- ◆ Full PowerOn used by Control Centers for
 - ◆ Dispatching trouble orders
 - ◆ Dispatching In-Service field conditions
 - ◆ Tracking of scheduled field work that involves customer outages
- ◆ PowerOn Remote Dispatch (PORD) used by Field Operations during decentralization for high-volume storms, working of wires down and tree type conditions
- ◆ PowerOn Real Time Information System (PORTIS) used by management as a tool to analyze storm impacts such as
 - ◆ Number and locations of customers without power
 - ◆ By town, feeder, device
 - ◆ Working crews assigned to outages
 - ◆ Emergency / 911 calls

Basic Features of PowerOn

- ◆ GIS-driven electrical network model
- ◆ CSS integration - accepts trouble calls and provides restoration status
- ◆ Automated analysis and intelligent prediction of trouble calls
- ◆ Crew management functions
- ◆ Dispatching and management of in-service & no-service trouble orders
- ◆ Provides graphical display of electrical network and crew locations
- ◆ Emergency and planned distribution switching functions
- ◆ Dynamic real-time reporting capability – PowerOn Real Time Information System (PORTIS)
- ◆ Historical archiving of trouble order data

National Grid Outage Management Process



PowerOn Power Control Window

PowerOn Control Window - New England Prod

File Edit View Go Tools Trouble Order Help

Quick Find 9973 Mode: Operational Unfinished Orders:

Overview Organizations Crews Management Areas Shifts Projects Trouble Orders Customers Clearances Assurances Tags Crews Tags Abnormal Devices Clearances Assurances

Trouble Orders

Order ID	Station Name	Feeder #	Device	Location	Customers	No. Calls	P
997617-1	HOPKINS HILL	56-63F5		43 WILLIAMS ST COVENTRY, RI	0	1	
997618-1	HYDE	53-28J1		2 NAUSHON CT PAWTUCKET, RI	0	1	
997619-1	LITCHFIELD ST	01-207W2		Partial Lights: 01-207W2	0	1	
997620-1	PRATTS JUNC.	01-225W3	Single Customer	MALBURN TER - MALBURN ST	1	1	Pr
997621-1	PRATTS JUNC.	01-225W3	Single Customer	MALBURN TER - MALBURN ST	1	1	Pr
997622-1				Unlocated - 17 BEAL ST WINTH...	0	1	
997623-1	WHITINS POND	05-320W1		Partial Lights: 05-320W1	0	1	
997624-1	KNIGHTSVILLE	53-66J4		62 APPLETON ST CRANSTON, RI	0	1	
997625-1				Unlocated - PERRY STREET SU...	0	1	
997626-1	PRATTS JUNC.	01-225W3	Single Customer	MALBURN ST - MALBURN TER	1	1	Pr
997627-1	BROWN ST	09-1001W1		510 STATE RD N ADAMS, MA	0	1	
997628-1				Unlocated - P930 TYNGSBORO ...	0	1	
997629-1	LITTLE REST RD	09-516L3		Partial Lights: 09-516L3	0	1	

Tasks For Order

No.	Type	Device	Description	Location	Assigned To	Result	C
1	I		Investigate Task	Unlocated - P930 TYNGSBORO R...			

Trouble Calls For Order

Name	Descript...	Critical?	Meter No.	Customer...	Trouble ...	Tro...	Informative?	Ti
POLICE DEPARTMENT	911-0	No		Normal	911	Open	Yes	08,

3:47 PM 67 Trouble Orders 1 Tasks For Order 1 Trouble Calls For Order

PowerOn Map Window

PowerOn Map Window

File View Query Tools Administration

Scale: 1:400

Map Overviewer | Locator
Bookmarks | Circuit Explorer

Explore circuit based on:
Selected Facility | Circuit ID

Fuse P# 74
? 01-225W3 Goto

Search Criteria Abnormal Only

Dir...	Description
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Device Information
Selection: Map Selection
Show: Operational Information
Fuse P# 74

Operational Information
Station Name: PRATTS JUNC.
Feeder: 01-225W3
Description: Fuse P# 74
TD: TD 0341, LI 0238, Pole 74
Location: MALBURN ST - LANCASTER
Phasing: B

Style: 1:400 All Phase Select

Cutout Installation exi_location; ID: 382282671; Branch: unset

PowerOn Trouble Order Worksheet – Assign Tab

Order Worksheet

Owner: Lindewall, Christelle Mode: Operational

Overview Assign Complete Work

Priority: 1 IS: 1283439-1 Status: Arrived

Customer Calls Instructions

Reported Trouble Types: 911

Comments: 911 MVA P7/21 XFMR AND WIRES DOWN ACROSS RD, TELCO WAS NOTIFIED

Trouble Call: 1 Of 1 Time Of Call: 02:32 6/5/2009 Meter: 11647132

Name: CHELMSFORD POLICE Phone: 000 000-0000

Address: 75 GORHAM ST CHELMSFORD, MA 01824 City: CHELMSFORD

Location

Device: OH Transformer Pole # 21

Address: GORHAM ST - ALBINA ST Normal Feeder: 14-70L3

Primary Crew Assignment

Crew: 10172 Hebert/Thibodeau (TR/LP) Release En Route 06:09 6 / 5 /2009 Cancel

Assign 04:16 6 / 5 /2009 Cancel Arrive 06:09 6 / 5 /2009 Cancel

Dispatch 06:09 6 / 5 /2009 Cancel ETR 11:30 6 / 5 /2009 Cancel

Curr. Cust. Affected: 8 Duration: 387 CMI: 3096 No. Calls: 0 Feeder: 14-70L3

Finish Later OK Cancel Apply

PowerOn Trouble Order Worksheet – Complete Tab

Owner: Rebello, Stephen E | Mode: Operational

Overview | Assign | **Complete** | Work

Priority: 4 | NS: 965308-1 | Status: Field Complete

Field Completion Information

Problem | Restorations | Crews

First Crew: Arrived | 11:58 8/14/2007 | Cancel | ETR: Set | 14:00 8/14/2007 | Cancel

Device: Fuse P# 91 | Phases: A B C

Confirm Move Up Move Down No Outage | Clear

Restored: Set | 12:24 8/14/2007 | Cancel | Phases: A B C

Field Complete | 12:40 8/14/2007 | Cancel

Reliability Details:

Purpose: Unintentional | Failed Equipment: Conductors

Classification: Dist. - OH - Main Line | Observed Condition: Down

Cause: Animal | Weather: Fair

Wind: Wind - Mild (13-31mph)

Order Comments: Animal contact at P. 107 Pond St., Franklin - flash over caused primary conductor to burn down.

Data Error | Follow-Up Order ... | Close | 12:56 8/14/2007 | Cancel

Orig. Cust. Affected: 254 | Curr. Cust. Affected: 0 | Duration: 80 | CMI: 20320 | No. Calls: 3 | Feeder: 05-344W1

Finish Later | OK | Cancel | Apply

IDS Analysis Data Screen

General	Restoration Steps	Analysis Data	DPU / PUC / DTE	Audit
Purpose Code:		Unintentional		
Distribution Classification:		Main line - overhead		
Initial Response Crew:				
Company Employee Arrival Time:		08/14/07	00:00	
Cause:		Animal		
Component Failed:		Conductors		
Observed Condition:		Down		
Weather Conditions:		Fair		
Wind / Storm Conditions:		Wind - Mild (13-31 mph)		
Voltage Where Failure Occured:				
Protective Interruption Device:				
Overhead Construction Type:				
Overhead Conductor Description:				
Conductor Size:				

PORTIS

General Outage Info - Microsoft Internet Explorer provided by National Grid

P.O.R.T.I.S.

PowerOn Real-Time Information System



6/5/2009 10:13:53 AM

Report: Division: Region: Crew Area / Satellite: Summarize By:

When changing filters to different Reports and specific areas, click "Submit" to populate the Report.

General Outage Information

Crew Area	Total Customers Interrupted	Customers Predicted as Interrupted	Customers Confirmed as Interrupted	Customers Served	% of Total Customers Interrupted	Active Outages	Active Outages with Crews Assigned	I/S Calls	N/S Calls	FDRS AFF	CONF FDR L/Os	911 Calls	Wire Down Calls	Tree Calls	Pole Calls	Crews Working
Athol	0	0	0	16,920	0.00 %	0	0	0	0	0	0	0	0	0	0	0
Beverly/Gloucester	0	0	0	71,357	0.00 %	0	0	1	0	0	0	0	1	0	0	0
Great Barrington	0	0	0	16,164	0.00 %	0	0	0	0	0	0	0	0	0	0	0
Lebanon	8	8	0	15,965	0.05 %	1	1	0	3	1	0	0	0	0	0	1
Leominster	1	1	0	65,605	0.00 %	1	0	2	1	1	0	0	0	0	0	0
Malden/Lynn	1	1	0	162,451	0.00 %	1	0	0	1	1	0	0	0	0	0	0
Monson	0	0	0	43,890	0.00 %	0	0	1	0	0	0	0	0	0	0	0
Newburyport	0	0	0	27,401	0.00 %	0	0	1	0	0	0	0	0	0	0	0
North Adams	0	0	0	20,844	0.00 %	0	0	0	0	0	0	0	0	0	0	0
North Andover	0	0	0	102,094	0.00 %	0	0	2	0	0	0	0	1	1	1	0
Northampton	0	0	0	19,119	0.00 %	0	0	0	0	0	0	0	0	0	0	0
Salem	2	2	0	20,050	0.01 %	2	2	3	2	2	0	0	0	0	0	1
Spencer	0	0	0	35,396	0.00 %	0	0	0	0	0	0	0	0	0	0	0
Tewksbury	8	0	8	110,715	0.01 %	1	1	2	0	1	0	1	0	0	0	2
Walpole	0	0	0	5,196	0.00 %	0	0	0	0	0	0	0	0	0	0	0
Worcester	0	0	0	125,121	0.00 %	0	0	2	0	0	0	0	0	0	0	0
Total	20	12	8	858,288	0.00 %	6	4	14	7	6	0	1	2	1	1	4