



## *Integrated Work Management System*

Presenters: Karen L Henry  
Todd Allen  
Tririga Breakouts  
November 30, 2017



Sandia National Laboratories is a multimission laboratory managed and operated by National Technology and Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International, Inc., for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.



# SNL Primary Sites

**Albuquerque, New Mexico**



**Livermore, California**



**Kauai, Hawaii**



**Tonopah, Nevada**





# SNL Mission Areas

## ■ Nuclear Weapons



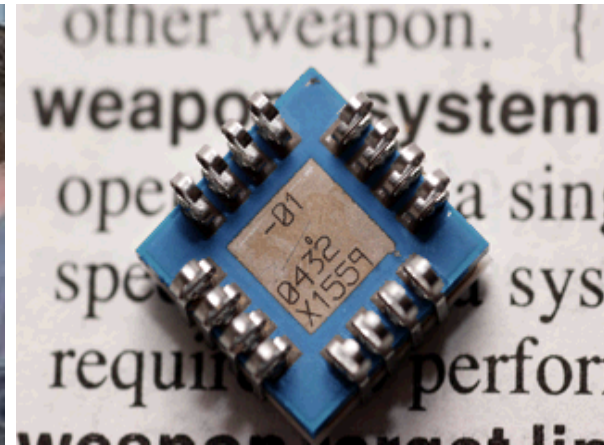
### About Nuclear Weapons

Since 1949, Sandia's scientists and engineers have conducted breakthrough research in weaponization.



### Safety & Security

Safe and secure nuclear weapons are of paramount importance in a changing global threat environment.



### Science & Technology

Sandia provides the science and engineering to help maintain and certify the nation's nuclear stockpile.



# SNL Mission Areas

## ■ Defense Systems & Assessments



### About Defense Systems & Assessments

Our engineering, science, and technology expertise supports soldiers on the battlefield.

### Program Areas

Our multi-faceted research detects and defends against threats to the United States.

### Accomplishments

Scientists and engineers continually deliver results with significant impacts on national security.



# SNL Mission Areas

## ■ Energy & Climate



### **Stationary Power**

Focus on safety, security, and resilience of energy infrastructure & assets, high-efficiency conversion of low and zero-carbon energy sources to electricity, and the back end of the nuclear fuel cycle.

### **Climate & Earth Systems**

Address challenges associated with the understanding and predictability of climate evolution, reduce the amount of energy required to produce/transport safe supplies of water, reduce impact of energy production on scarce water resources, and develop/produce subsurface energy sources with reduced environmental impact.

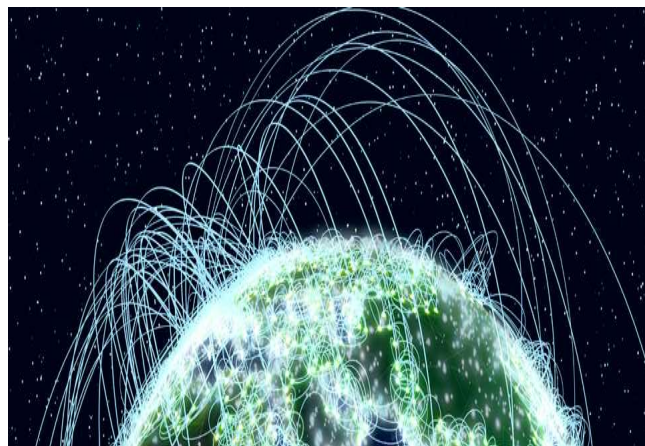
### **Science & Technology**

Supporting the scientific base for competencies essential to Sandia missions. The DOE Office of Science is the single largest supporter of basic research in the physical sciences in the U.S., providing more than 40 percent of total funding in this area



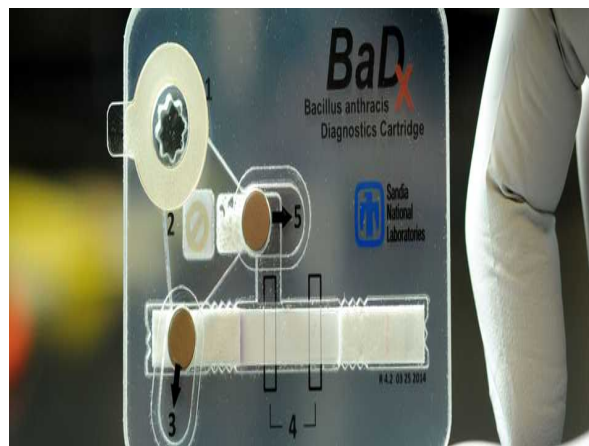
# SNL Mission Areas

## ■ Global Security



### **Reducing cyber threats**

Tools and techniques to improve cyber defense and protect networks and data



### **Reducing global chemical and biological dangers**

Technologies for rapid detection and characterization of chemical and biological threats



### **Reducing global nuclear dangers**

Unique technical and policy solutions to reduce global nuclear and radiological dangers



# IBM TRIRIGA Benefits

- Create a single reliable source for facility data
- Improve transparency with oversight organizations
- Streamline Facility business processes with a single, integrated management tool
- Give customers simple tools and real-time information
- Replace homegrown tools/applications
- Integrate with other systems
- Ability to build customized functionality
- Provide source documentation for internal and external audits
- Tririga export functionality reduces the need for user reports



# IBM Tririga Portfolio

- Locations
  - 4 Sites
  - 1,016 Buildings
  - 1,509 Structures
  - 2,379 Floors
  - 25,106 Spaces
- Organizations
  - 13 Division Organizations
  - 1,164 Department Organizations
- People
  - 27,653 Members of the Workforce
- Assets
  - 270 Electrical Meters

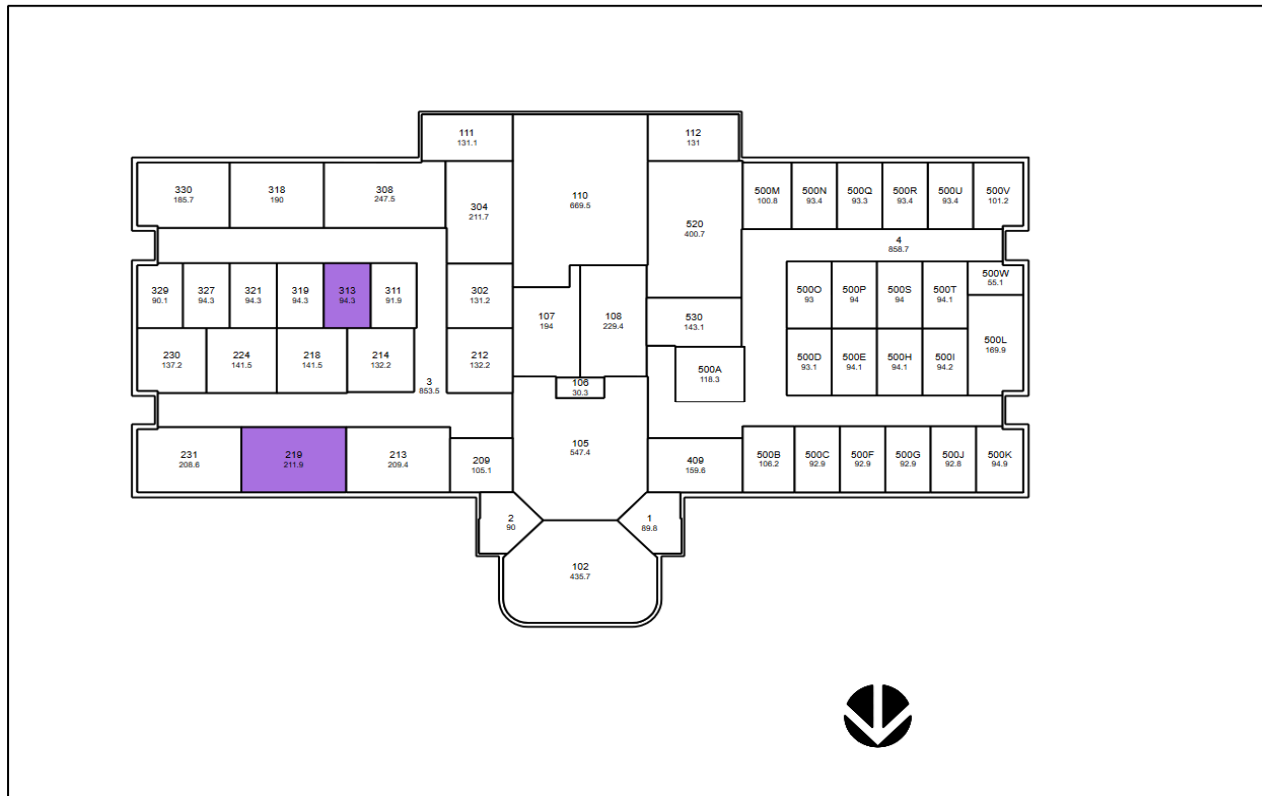



# IBM Tririga Space

- Space
  - Follow BOMA standards for measuring space (floorplans)
  - 19,099 Organization Space Allocations
  - 36 Space Type Classifications
  - Space Occupancy Status & Space Utilization (office type space)
  - Workforce Primary Location (integration with PeopleSoft)
  - Space Audit using Cost Pools
  - Automated process for requesting/modifying/returning space
  - Graphical Queries



# Graphical Queries – Vacant Space



Vacant Offices		
Occupancy Status	Total Vacancies	Area
 Vacant	2	306.2
Total	2	306.2



# Graphical Query – Space Type







Space Type	
Name	Area
Administrative	224.9
Break Room	211.7
Conference Room	836.4
Corridor	1891.9
Equipment Room	931.6
General Office-Enclosed	2160
General Office-Open	1898.8
Janitor Closet	30.3
Lobby	547.4
Manager Office	743.9
Mens Restroom	229.4
Secretarial Office	250.4
Womens Restroom	194
Total	10150.9



# Graphical Query – Occupancy Status for Offices



Occupancy Status for Offices			
Name		Count	Area
	Occupied	34	3836.7
	Over Allocated	2	284
	Partially Occupied	4	626.2
	Vacant	2	306.2
Total		42	5053.2



# IBM Tririga Capital Projects

- Projects
  - 59,504 Projects (FY2000 – Current)
  - ~3,500 Per Year
  - Search Capabilities
  - Project Information
  - Project Team Assignments
  - Project Financial Data
  - Project Maximo Service Request Number
  - Financial Change Order Request
  - Excavation & Penetration Permit Tracking
  - Reporting



# Project Search Capabilities

Service Order Search

Service Order Search:

General

System

Debug

Workflow Instance

Associations

Print

Help

Clear

x

Search And Filter

Service Order Number

Service Order Name

Project Class Category

Project Class Code

Maximo Ticket #

Work Order #

SPO Contract Numbers

SPO Contract Name

BPA Contract Numbers

BPA Contract Name

Project Manager

Tech Area

Managing Org

Project Status

Customer Name

Charging Project

Building Number

Ops Tech

Service Orders

1 / 5951

Export

59504 total found

Apply Filters

Clear Filters

Show: 10

	Service Order #	Project Code	Project Status Date	Service Order Name	Authorized	Costs	Project Manager	Project Status	Project Schedule Status
	Contains	Contains	After	Contains	More Than or Equals	Equals	Contains	Contains	Contains
<input type="checkbox"/>	52470	MAINTENANCE		RE-KEY LOCKS/KEYS IN 821/2115 & 821/2003	\$2,000.00	\$124.15		CLOSED	PROJECT CLOSED
<input type="checkbox"/>	53516	FACILITIES EXPRESS		ADD START/STOP BAR TO CONVEYOR SYSTEM	\$15,000.00	\$10,533.06		CLOSED	PROJECT CLOSED
<input type="checkbox"/>	40499	FACILITIES EXPRESS		INSTALL 2 FANCOIL UNITS	\$70,000.00	\$47,195.28		CLOSED	PROJECT CLOSED
<input type="checkbox"/>	54891	MAINTENANCE		BUILDING 958 SAFETY SHOWER NOT FLOWING ENOUGH WATER	\$2,000.00	\$122.43		CLOSED	PROJECT CLOSED
<input type="checkbox"/>	42063	FACILITIES EXPRESS		INSTALL GROUND TO STATIC-FREE WORK BENCH	\$2,000.00	\$715.47		CLOSED	PROJECT CLOSED
<input type="checkbox"/>	56072	MAINTENANCE		REPLACE A UNICAN 1000 LOCK ON DOOR	\$2,000.00	\$471.99		CLOSED	PROJECT CLOSED
<input type="checkbox"/>	49714	OPEN SERVICE		GENERAL SERVICE AND MODIFICATIONS	\$10,000.00	\$9,926.51		CLOSED	PROJECT CLOSED
<input type="checkbox"/>	54472	MAINTENANCE		UNCRATE TWO BOXES	\$500.00	\$61.22		CLOSED	PROJECT CLOSED
<input type="checkbox"/>	53596	FACILITIES EXPRESS		PAINT WALL/TOUCH UP AROUND NEW PRINT BOARD & FILL IN HOLES WHERE OLD WHTBRD WAS	\$500.00	\$147.11		CLOSED	PROJECT CLOSED
<input type="checkbox"/>	51927	MAINTENANCE		INSTALL FULL SPECTRUM LIGHT BULBS	\$150.00	\$28.49		CLOSED	PROJECT CLOSED



# Project Information

Service Order: 191098 Add To Bookmarks Print Help

Project Info Teams Tracking Commitments Reports Change Order System Workflow Instance Associations Save Save & Close More x

(Required):

Service Order / Task Information

Funding

Authorized \$439,000.00

Costs \$325,899.95

Baseline \$.00

★ Service Order Number 191098

Managing Org 04824

Project Status Closed

Project Schedule Status PROJECT CLOSED

Service Order Name BLDG. 9956/9950 EXTEND FIBER COMMUNICATION

Project Class Category FACILITIES PROJECTS

Status Date 04/27/2017

Project Schedule Status Date

Project Class Code IGPP

Project Manager

Building Information

Add

Delete

Export

1 total found

Show: 10

Building Number	Ops Tech	Ops Tech Phone	Ops Tech Email
9956			

Customer Information

Show: 10

Export

1 total found

Customer Name	Department	Customer Phone	Customer Email	Agreement Num	Charging Project	Amount
				191098	190387.03	\$439,000.00

SPOs

Maximo Tickets

Excavation & Penetration Permits

SPOs

Export

5 total found

Apply Filters

Clear Filters

Show: 10

PO Number	Vendor Name	POP Date	Order Date	Order Amount	Amount Billed	PO Status	RFI?	Submittal?
Contains	Contains	After	After	Equals	Equals	Contains	Contains	Contains
1710725		01/31/2017	07/27/2016	\$5,439.96	\$2,099.63	CLOSED		
1670543			03/23/2016	\$230,368.00	\$230,368.00	Closed		
1670543			03/23/2016	\$57,978.00	\$57,978.00	Closed		
1663871		06/30/2016	03/03/2016	\$6,319.28	\$4,677.16	CLOSED		
1661358		07/15/2016	02/24/2016	\$9,020.36	\$3,806.22	Closed		

Save Save & Close More x



# Project Team Assignments

Service Order: 126025

Add To Bookmarks

Print

Help

Project Info

Teams

Tracking

Commitments

Dig Permits

Reports

Change Order

System

Workflow Instance

As ▾

Save

Save & Close

More ▾

x

(Team Members):

- Team Members

Add Role

Add People

Delete

Export

5 total found

Apply Filters

Clear Filters

Show: 10 ▾

<input type="checkbox"/>	Member Role	Member Name	Work Phone	Email	Organization Name
<input type="checkbox"/>	Contains	Contains	Contains	Contains	Contains
<input type="checkbox"/>	ADMINCLERK				106981 - FEM&IS Administrative Support(002733)
<input type="checkbox"/>	BUILDING MANAGER				04826 - Customer Operations North(000512)
<input type="checkbox"/>	CME				04826 - Customer Operations North(000512)
<input type="checkbox"/>	COORDINATOR				
<input type="checkbox"/>	PROJECT MANAGER				

Save

Save & Close

More ▾

x



# Project Tracking Notes

Service Order: 126025



 Add To Bookmarks  Print  Help

[Project Info](#) [Teams](#) **[Tracking](#)** [Commitments](#) [Dig Permits](#) [Reports](#) [Change Order](#) [System](#) [Workflow Instance](#) [As](#) 

[Save](#) [Save & Close](#) [More](#) 

## - Tracking

[Add](#) | [Delete](#)

						<a href="#">Del</a>
 <a href="#">Export</a> 5 total found <a href="#">Apply Filters</a> <a href="#">Clear Filters</a>						Show: 10 
<input type="checkbox"/>	!	Status	Date	\$ Change	Remarks	Created By
		<input type="text" value="Contains"/>	<input type="text" value="After"/>	<input type="text" value="Equals"/>	<input type="text" value="Contains"/>	<input type="text" value="Contains"/>
<input type="checkbox"/>		<a href="#">CHANGE ORDER (TO ASO)</a>	<a href="#">07/14/2008</a>	<a href="#">-725.91</a>	<a href="#">MP: DECREASE SO FROM \$7,650 TO \$6,924.09</a>	
<input type="checkbox"/>		<a href="#">CLOSE-OUT NOTICE RECEIVED</a>	<a href="#">05/28/2008</a>	<a href="#">0</a>	<a href="#">ETM: B&amp;D REL#517 PER R. JUSTUS</a>	
<input type="checkbox"/>		<a href="#">CHANGE ORDER (TO ASO)</a>	<a href="#">04/04/2008</a>	<a href="#">2,650.00</a>	<a href="#">MP: INCR. SO FROM \$5,000 TO \$7,650</a>	
<input type="checkbox"/>		<a href="#">RELEASE NUMBER ISSUED</a>	<a href="#">02/18/2008</a>	<a href="#">0</a>	<a href="#">RAF: 2/18/08, NEW RELEASE ISSUED</a>	
<input type="checkbox"/>		<a href="#">SERVICE ORDER BEGAN</a>	<a href="#">02/15/2008</a>	<a href="#">0</a>	<a href="#">2/15/2008</a>	



# Project Cost and Commitments

Service Order: 126025 Add To Bookmarks Print Help

Project Info Teams Tracking **Commitments** Reports Change Order System Workflow Instance Associations Save Save & Close More X

**Commitment**

Authorized \$6,924.10 Allocated Total 0.00 Difference \$6,924.10

**Tasks**

Export 50 total found Apply Filters Clear Filters

Task	Name	Baseline Start	Baseline End	Allocated	Costs	Committed	ID
126025	RUN SEVEN NEW 1/4" OD X 3/16" ID TEFLON SAMPLE TUBES FROM MDA-K AND MDA-Q TO EXISTING SAMPLE POINTS AT VIIS AND E500 IMPLANTERS	After	After	Equals	Equals	Equals	126025
1	PROJECT DEVELOPMENT			0.00	0.00	0.00	126025.1
1.1	A/E PROJ DEVELOPMENT			0.00	0.00	0.00	126025.1.1
1.2	MANAGEMENT			0.00	0.00	0.00	126025.1.2
1.2.1	PROJECT MANAGEMENT			0.00	0.00	0.00	126025.1.2.1
1.2.2	DESIGN MANAGEMENT			0.00	0.00	0.00	126025.1.2.2
1.3	DESIGN CRITERIA/SOW			0.00	0.00	0.00	126025.1.3
1.4	CONCEPT DESIGN RPT			0.00	0.00	0.00	126025.1.4
1.5	ES&H SERVICES			0.00	0.00	0.00	126025.1.5
2	PRELIMINARY DESIGN			0.00	0.00	0.00	126025.2
2.1	A/E PRELIM DESIGN			0.00	0.00	0.00	126025.2.1
2.2	MGT PRELIM DESIGN			0.00	0.00	0.00	126025.2.2
2.2.1	PROJECT MANAGEMENT			0.00	0.00	0.00	126025.2.2.1
2.2.2	DESIGN MANAGEMENT			0.00	0.00	0.00	126025.2.2.2
2.3	ES&H SERVICES			0.00	0.00	0.00	126025.2.3
3	FINAL DESIGN			0.00	0.00	0.00	126025.3
3.1	A/E FINAL DESIGN			0.00	0.00	0.00	126025.3.1
3.2	MGT FOR FINAL DESIGN			0.00	0.00	0.00	126025.3.2
3.2.1	PROJECT MANAGEMENT			0.00	0.00	0.00	126025.3.2.1
3.2.2	DESIGN MANAGEMENT			0.00	0.00	0.00	126025.3.2.2
3.3	ES&H SERVICES			0.00	0.00	0.00	126025.3.3
4	CONSTRUCTION			0.00	6,924.10	6,924.10	126025.4
4.1	CONSTRUCT CONTRACT			0.00	6,694.03	6,694.03	126025.4.1
4.1.1	UTILITIES/LAND			0.00	0.00	0.00	126025.4.1.1
4.1.2	BUILDINGS			0.00	6,694.03	6,694.03	126025.4.1.2
4.1.3	DEMOLITION			0.00	0.00	0.00	126025.4.1.3
4.2	EQUIPMENT			0.00	0.00	0.00	126025.4.2
4.2.1	SPECIAL EQUIPMENT			0.00	0.00	0.00	126025.4.2.1
4.2.2	FURNITURE			0.00	0.00	0.00	126025.4.2.2
4.2.3	SANDIA FURN EQUIP			0.00	0.00	0.00	126025.4.2.3
4.2.4	SFE-COMMUNICATIONS			0.00	0.00	0.00	126025.4.2.4
4.2.5	SFE-SECURITY			0.00	0.00	0.00	126025.4.2.5
4.2.6	SFE-CONTROLS			0.00	0.00	0.00	126025.4.2.6
4.3	INSPECT & ACCEPT			0.00	230.07	230.07	126025.4.3
4.3.1	INSPECTION			0.00	230.07	230.07	126025.4.3.1
4.3.2	COMMISSIONING			0.00	0.00	0.00	126025.4.3.2
4.3.3	ESCORTS/SECURITY			0.00	0.00	0.00	126025.4.3.3
4.3.4	TITLE III SERVICES			0.00	0.00	0.00	126025.4.3.4
4.3.5	TESTING			0.00	0.00	0.00	126025.4.3.5
4.3.6	OBM			0.00	0.00	0.00	126025.4.3.6
4.4	MGT FOR CONSTRUCTION			0.00	0.00	0.00	126025.4.4
4.4.1	PROJECT MANAGEMENT			0.00	0.00	0.00	126025.4.4.1
4.4.2	CONSTRUCTION MGT			0.00	0.00	0.00	126025.4.4.2
4.5	ES&H SERVICES			0.00	0.00	0.00	126025.4.5
5	CLOSEOUT			0.00	0.00	0.00	126025.5
5.1	FIT-UP & MOVE IN			0.00	0.00	0.00	126025.5.1
5.2	MANAGEMENT-CLOSEOUT			0.00	0.00	0.00	126025.5.2
5.3	OBM SERVICES			0.00	0.00	0.00	126025.5.3
6	CONTINGENCY			0.00	0.00	0.00	126025.6
6.2	EXPENSE CONTINGENCY			0.00	0.00	0.00	126025.6.2



# IBM Tririga Sustainability

- Electricity Utility Meter Readings (assets)
  - Apportioning Usage to Location by %
  - 13,691 Apportioning Records from 270 SNL NM Electrical Meters
  - Electricity Utility Usage Invoicing

Utility Invoice Line Item: 1028480 Print H

General System Workflow Instance Reports Associations Audit Actions

(Required): Utility Invoice Line Item Details.

**General**

Name 823-CH-Oct-17 Status Active

**Units**

Currency US Dollars \* Quantity UOM kilowatt-hours

Currency Exchange Date 10/02/2017 07:06:44

**Details**

* Line Number	44	* Date	10/01/2017
* Utility Bill Type	Energy	Meter Name	823-CH
* Energy Type	Electricity	Energy Source	Scope 2 (Indirect)
Include In Energy Use? <input checked="" type="checkbox"/>		Cooling Degree Days	0
Renewable Source? <input type="checkbox"/>		Heating Degree Days	0
Billing Period	September - 2017	Peak Load	0 kilowatt-hours
From Date	09/01/2017	To Date	09/30/2017
Current Reading	11780762.295 kilowatt-hours	Previous Reading	11737042.008 kilowatt-hours
		Meter Group ID	
		Meter System ID	823-CH
		Meter Group ID	Chiller
		Meter KVA Rating	500
		Meter Multiplier	1
		Is Sub-station?	<input type="checkbox"/>
		Is Direct Feed?	<input type="checkbox"/>
		Is Excluded?	<input type="checkbox"/>

**Meter Service Allocations**

Export 4 total found Apply Filters Clear Filters

Service Location	Service Allocation Percent
Contains	
821	56.7 percent
823	29 percent
825	5.5 percent
869	8.8 percent
	100 percent

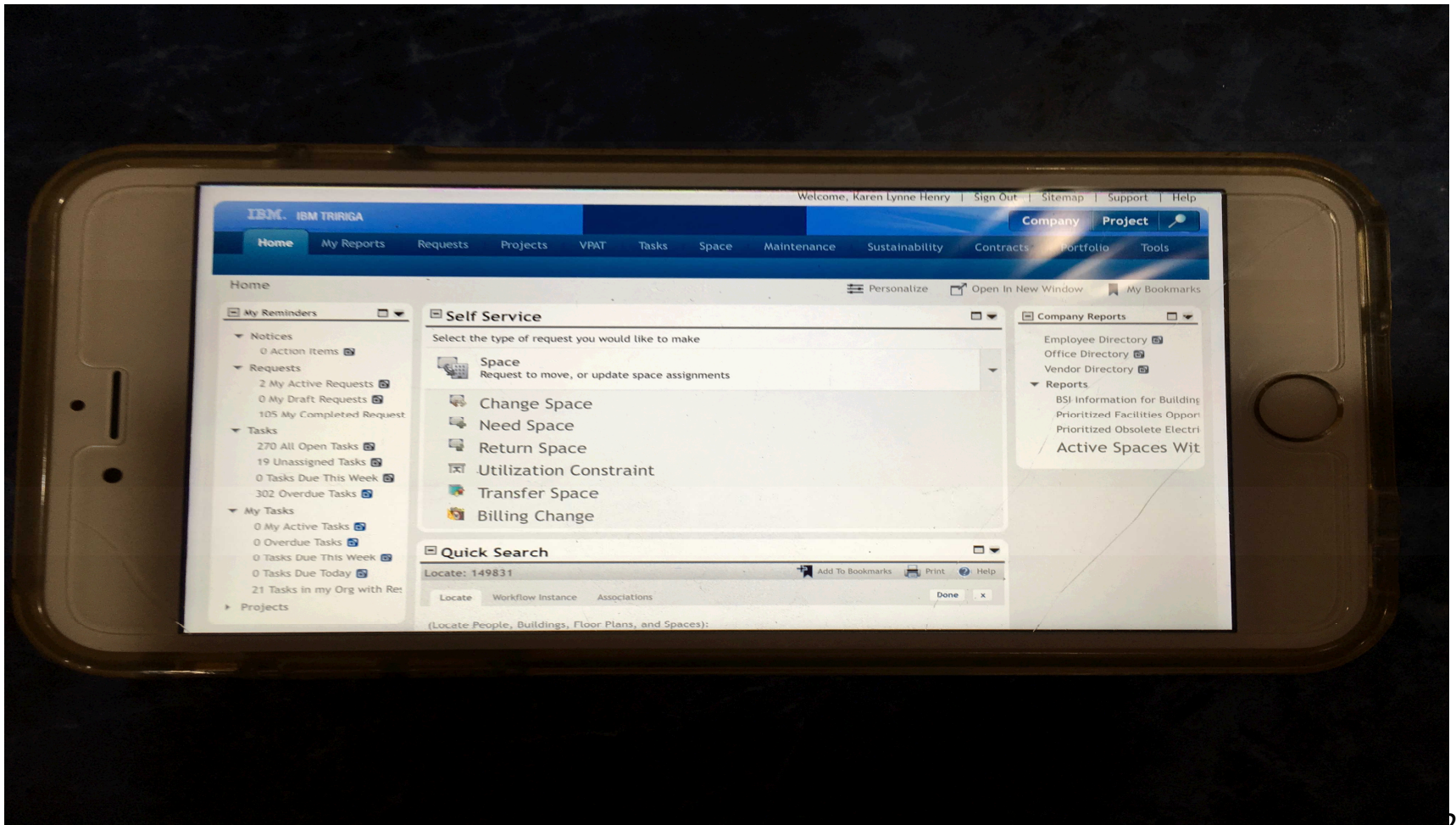


# IBM Tririga Real Estate

- Real Estate Leases & USAF Land Use Permits
  - Real Estate Leases by Type & Category
  - Critical Dates
  - Reminders
  - Approvals
  - Document Management
  - Version History
  - Payment Schedules
  - Terms/Options
  - Document Routing (Sandia, NNSA, DOE)
  - Notifications



# Tririga on any Sandia Mobile Device





# Other Sandia Uses of Tririga Data

- Analytics for Sandia Knowledge (ASK) – Rich visualizations of corporate data, trends and workforce information, ASK unlocks insights about Sandia to help management make more informed decisions.
- Corporate Maps – Sandia site maps that provides the ability to search for a building, person, room, and gate.
- Customer Satisfaction Surveys
- Corporate Metric Reporting



Questions ?