Used Fuel Disposition Campaign

On-Line Waste Library (OWL)

Walter Walkow

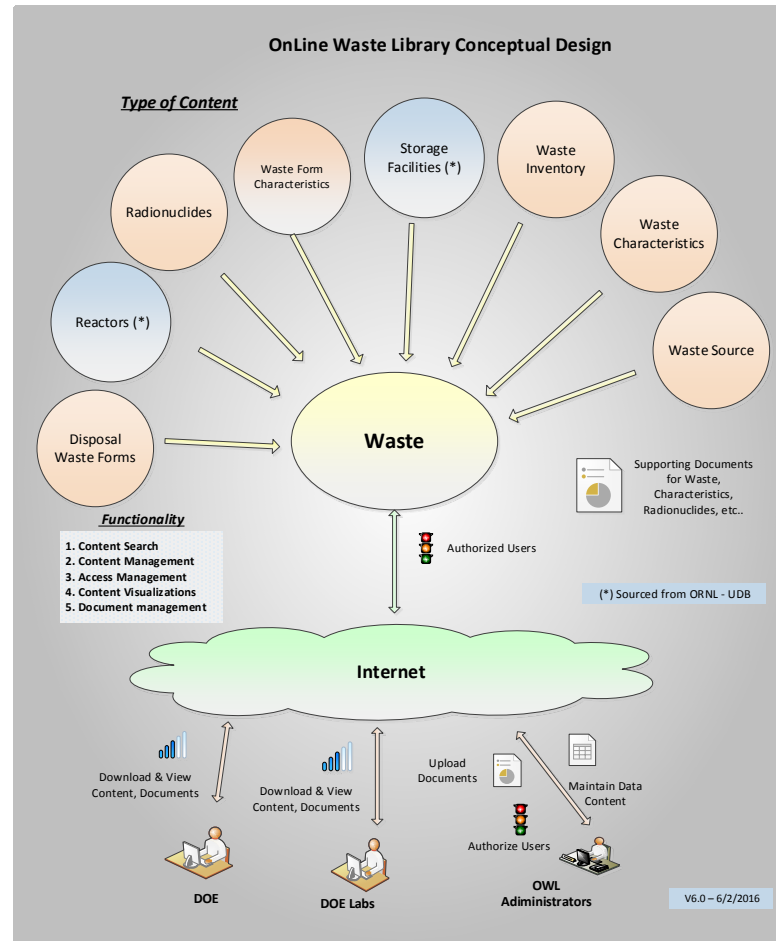**Solutions Architect, Data Sciences, SNL**

Database and Capabilities

June 7, 2016

What is OWL, What objective does it support?
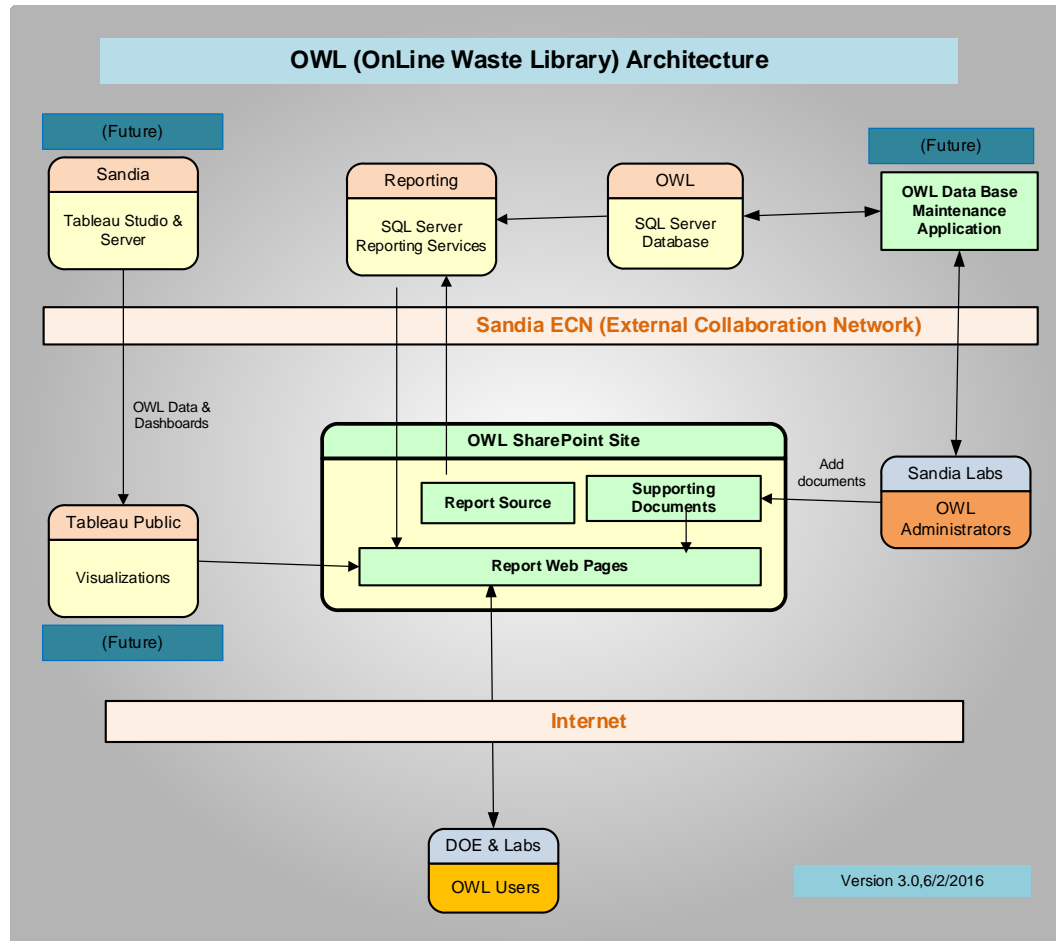
- **OWL – The on-line waste library (OWL) contains detailed <u>cross-linked information</u>, both <u>technical</u> and <u>organizational</u>, regarding DOE-managed high-level waste (HLW) and spent nuclear fuel (SNF) (D-wastes), and other DOE-managed radioactive wastes that are likely candidates for deep geologic disposal, with <u>links to the current supporting documents</u> for the data (where possible).**

- **Supports "Identifying, listing, and developing inventories for DOE managed high level waste (HLW) and spent nuclear fuel (SNF) (D-wastes)…"**

  – As identified in presentation by Ed Matteo, March 2016, DOE-Managed Spent Nuclear Fuel and High Level Waste Research.
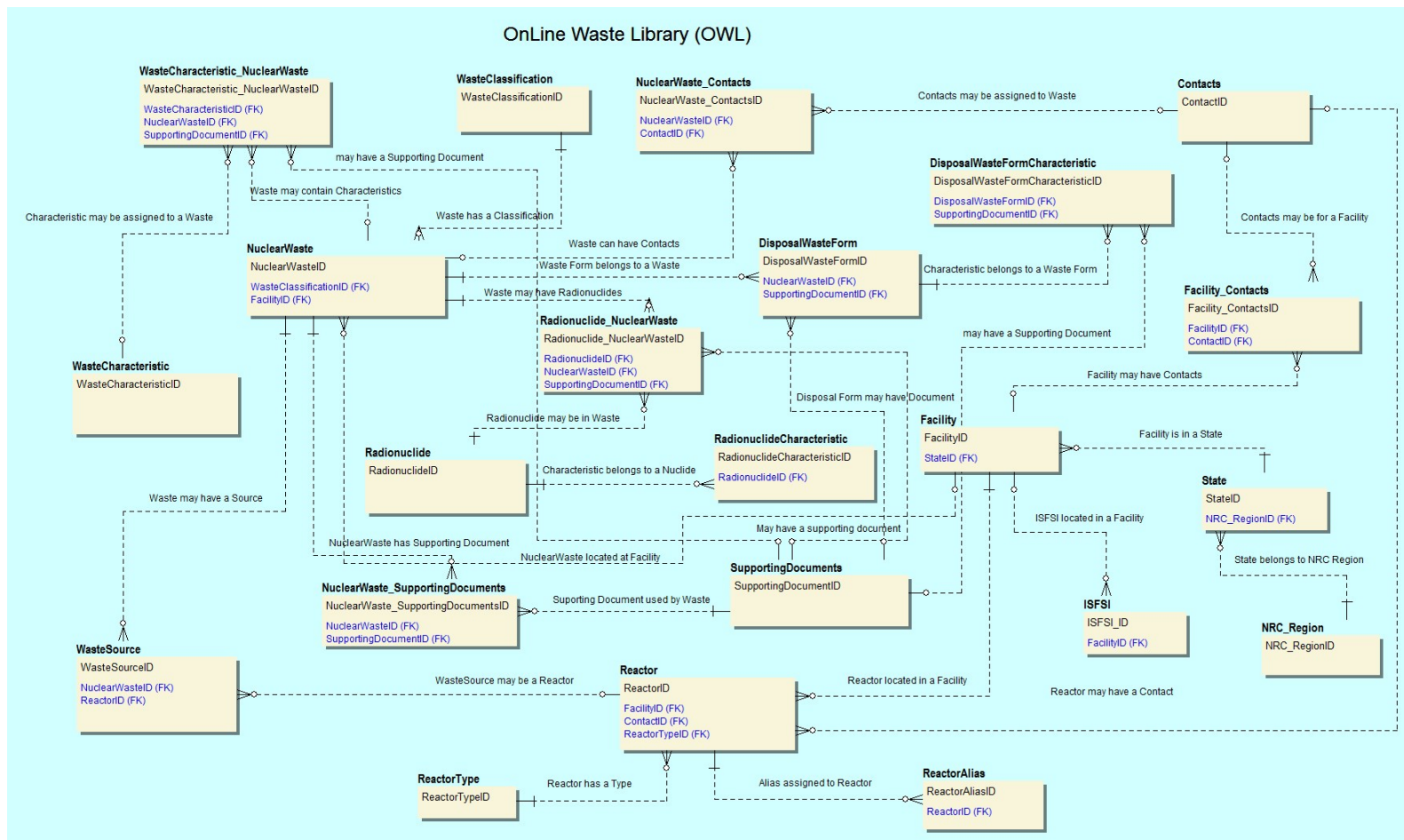
OWL Conceptual Design

OnLine Waste Library Conceptual Design

Type of Content

- Radionuclides
- Waste Form Characteristics
- Storage Facilities (*)
- Waste Inventory
- Waste Characteristics
- Reactors (*)
- Waste Source
- Disposal Waste Forms
- Waste

Supporting Documents for Waste, Characteristics, Radionuclides, etc..

Authorized Users

(*) Sourced from ORNL - UDB

Functionality

1. Content Search
2. Content Management
3. Access Management
4. Content Visualizations
5. Document management

Internet

Download & View Content, Documents

Download & View Content, Documents

Upload Documents

Maintain Data Content

Authorize Users

DOE

DOE Labs

OWL Adiminstrators

V6.0 – 6/2/2016

Used Fuel Disposition

Architecture

OWL (OnLine Waste Library) Architecture

Database Design – contains related content

OnLine Waste Library (OWL)

Current Status

- **Database design has been implemented at SNL**

- **Sample content has been added to validate that design supports HLW**

- **Sample Reports developed to provide content searching**

- **Sample Reports developed to display waste detail**

- **Sample visualizations developed to expose possible future capabilities**

    - Demonstration of OWL capabilities at later session today (see schedule)

Where Do We Go From Here?

- ■ **Add sample content to validate data base supports Spent Nuclear Fuel**

- ■ **Design & Implement data maintenance application.**

- ■ **Clarify target audience (DOE, Labs), future audience (Universities?)**

- ■ **Identify data classification (all Unclassified Unlimited Release?)**

- ■ **Obtain feedback from UFD members to validate design & identify additional content capabilities**

- ■ **Develop phased project plan to populate database, implement new functionality**

- ■ **Identify Quality Assurance process (review & approval process?)**