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Connecting Visionaries in Radiation Safety, Science and Industry



Annual Users' Conference

July 29 - August 2 | Omni Dallas Hotel, Dallas, TX



Dose Management and Access Control Solutions DosiServ

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Application Support Engineer – Product Line Manager

Mirion Connect | Annual Users' Conference 2024

Dallas, Texas



- General information about DosiServ.
 - General Architecture
 - IT information
 - Basic functionalities
- Dig into functionalities
 - Contamination Monitors
 - Dose management
 - External doses
 - Integrated dose versus electronic dose
 - Qualifications
 - RWP versus Jobs
 - Budgets
 - DMC selections
 - Dashboard
 - Track a DMC
 - Smart Offline
 - Personal limits
 - Custom Made reports
 - Body Monitors
- Coming Soon
 - NRC FORM 4/FORM5
 - Other



Agenda

General information about DosiServ

Dig into functionalities

2023 New features

Coming Soon (US version features)

Q&A

General information about DosiServ





General Architecture

♠ The DosiServ dosimetry system is an integrated state of the art dose management system.





- Nuclear industry (NPP, fuel cycle)
- Laboratories and education
- Homeland security and defense
- Industry and manufacturing
- Healthcare

























General Architecture

- The DosiServ dosimetry system operates with
 - Electronic dosimeters (MIRON's whole range, in hands free mode)
 - Readers (industrial, and/or PC based kiosks)
 - Computer system (server & clients)



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DMC 3000 LTx

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DIY Reader

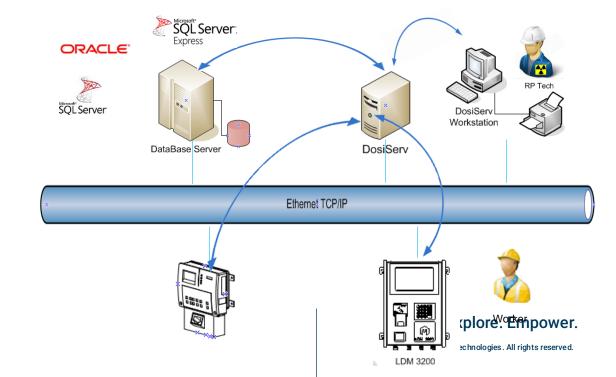






General Architecture

- ♠ The DosiServ dosimetry system operates on the network and uses a database to store all information
 - The main software reside on a server
 - Main software can connect to a database server or host its own database
 - Oracle
 - SQL Server
 - SQL Server express
 - Readers connect to DosiServ through the network
 - Client station for administration connects to DosiServ

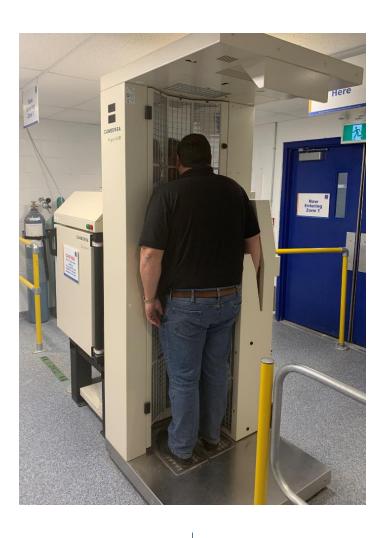




Readers examples



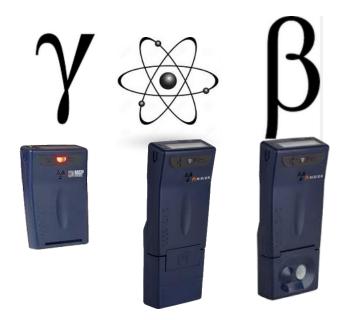






Basic Funtions

- Handle electronic dose data for
 - Workers (individual)
 - Jobs/RWP
 - Various controlled areas (zones)



- Offer access control capabilities, in order to check
 - Medical/training due dates.
 - Worker's accumulated doses versus configurable dose limits.
 - Any other worker qualification the Radiation Protection procedure should require











Basic Funtions

- Manages official (TDL/OSL) dose data for workers
 - Can be connected to TLD readers in order to import data
 - Live DIS -1 reader connection
 - Any kind of dose can be created to be monitored (Ex WBC / Eye)
 - Dose records can be checked at access time













Access

Control







Dig into functionalities

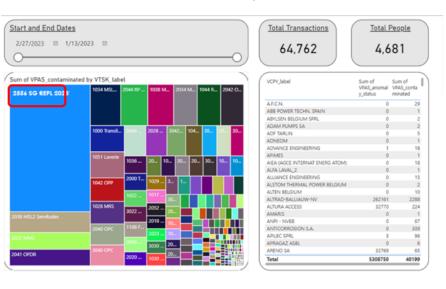




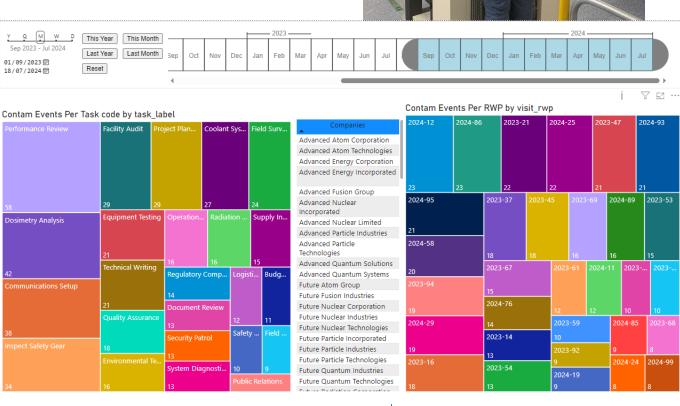
Monitors connections

- Option 1 :
 System stores contamination events
 (requires physical connection between a reader and the monitor)
- Option 2 : System retrieve measurement from monitors (requires "IT" connection with DosiServ)

RP Personnel will be able to create reports based on Contam events and Job codes



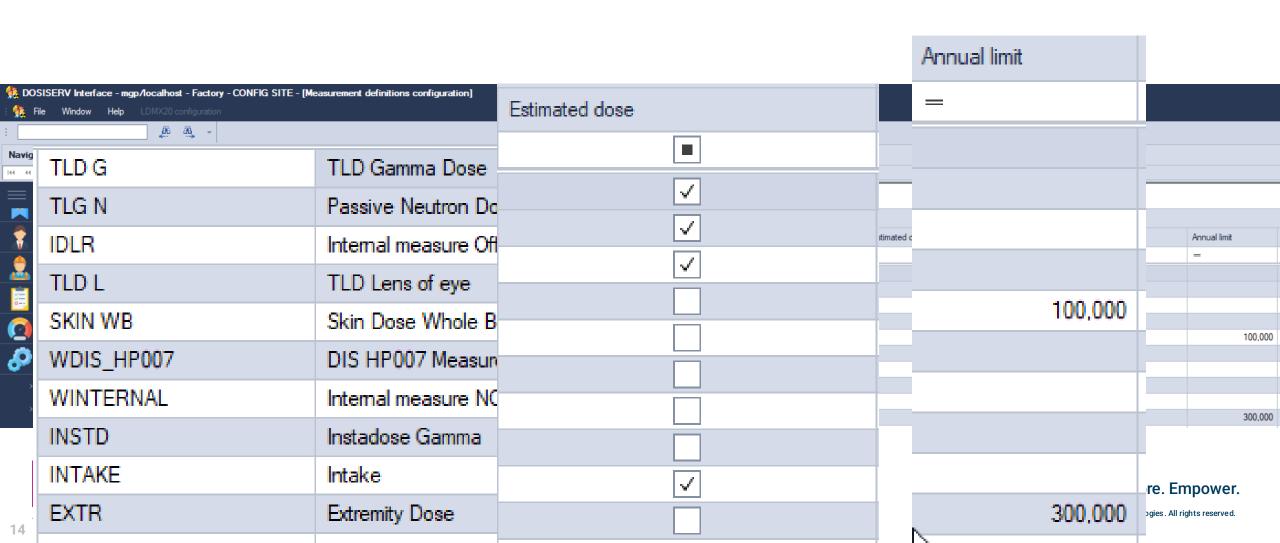
In this example 01/09/2023 E 18/07/2024 E JOB 2556 s the generated the of contamination during the obs





Other Doses

Create and monitor any dose needed



Electronic Dose v Legal Dose

"Legal" dose can "compete" with Electronic Dose :

Goal: protect the workers not to go over the legal (5 rem) yearly legal limit

Jan

Feb

Mar

Apr

May



Jan 0,1 rem

Feb 0,0 rem Mar 0,3 rem Apr 0,3 rem May ??? rem



DMC 3000

Jan 0,18 rem

Feb 0,1 rem Mar 0,4 rem Apr 0,4 rem May 0,2 rem YTD 0,7 rem

YTD 1,28 rem

YTD 0,9 rem

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Electronic Dose v Legal Dose

YTD 0,9 rem







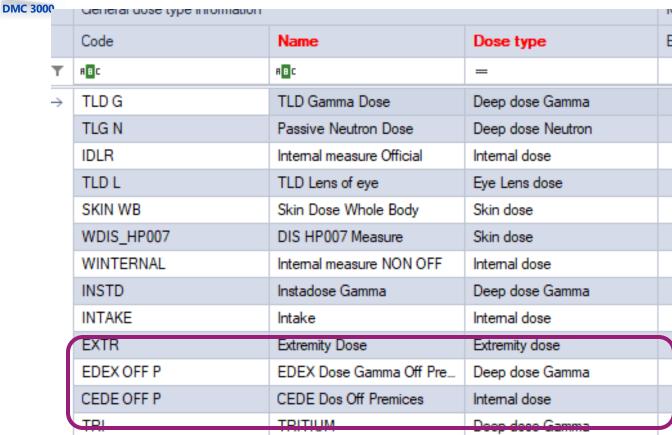
NRC FORM 4 (11-2020) 10 CFR PART 20



11a. EDEX

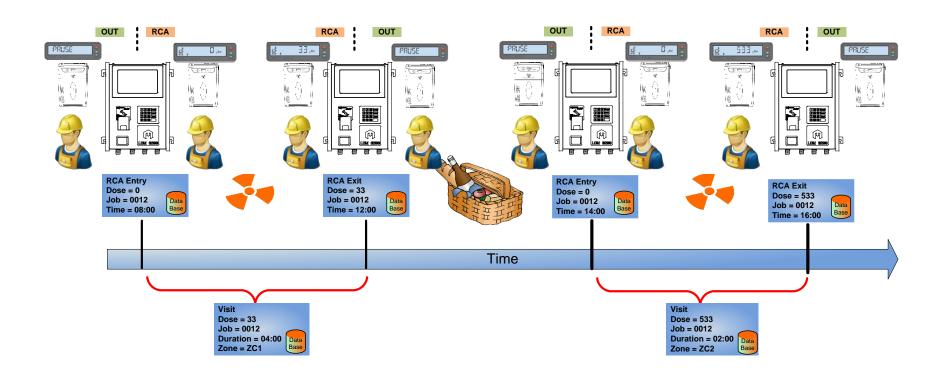






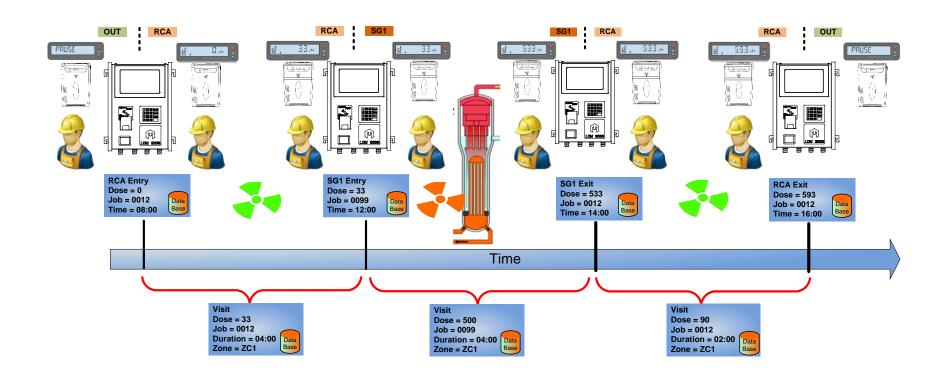


Main concept → Visits



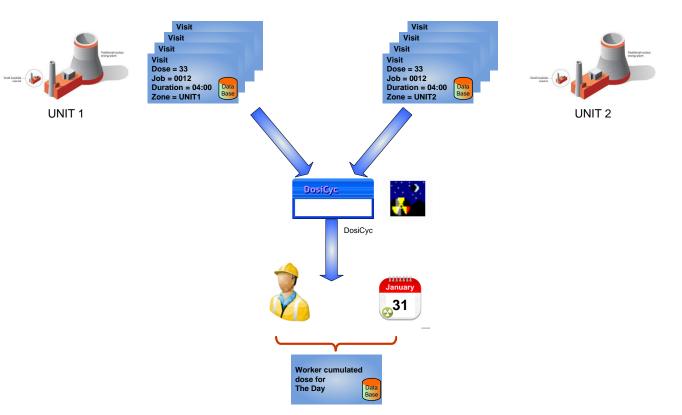


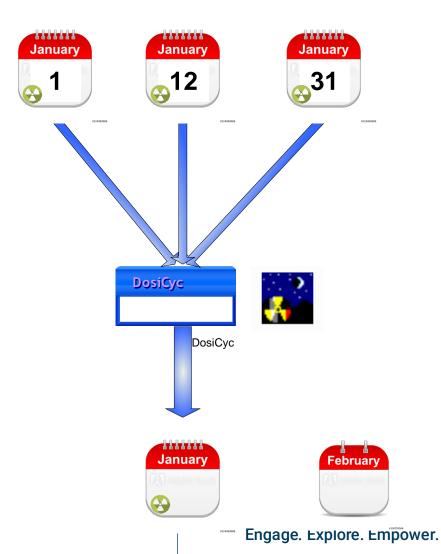
Main concept → Visits





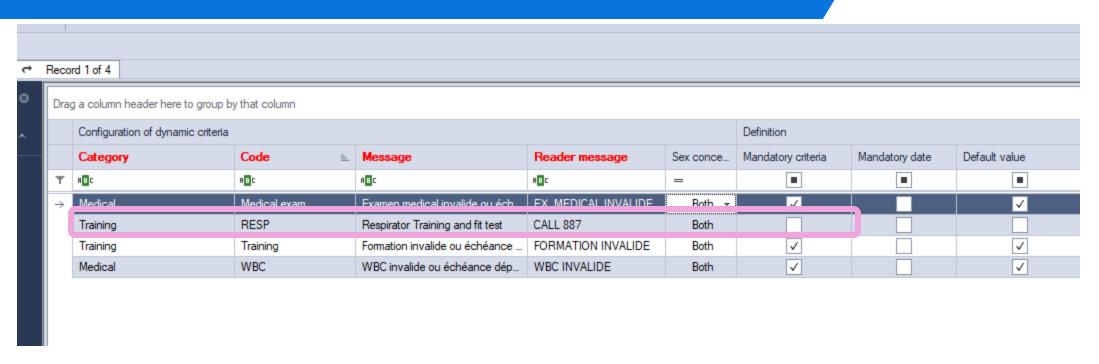
Dose calculations







Qualifications

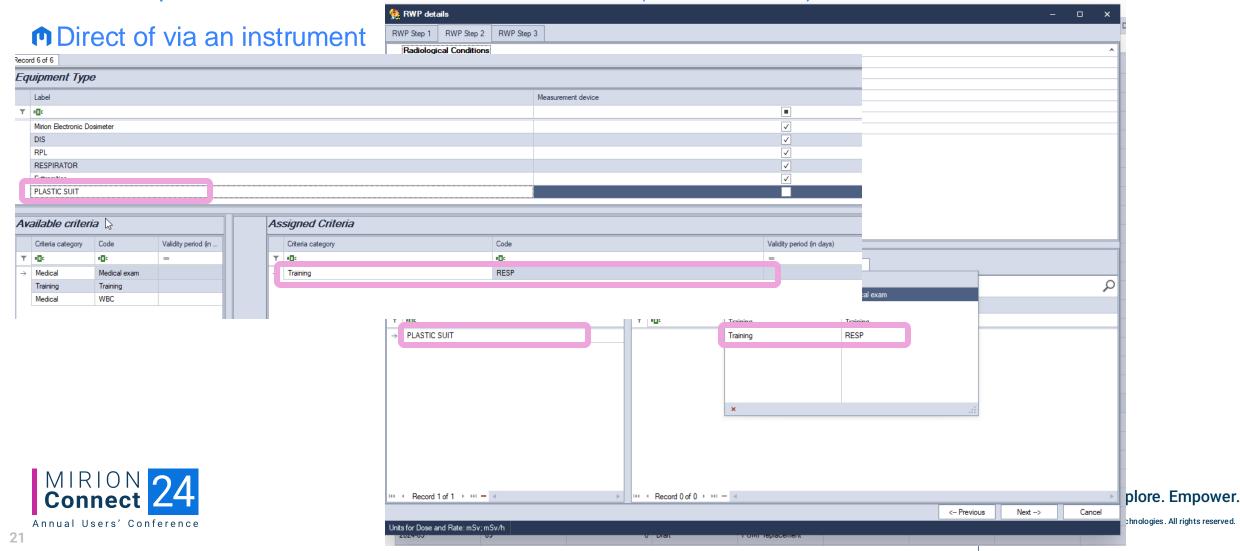


- New criteria can be added any time
- Criteria does not need the be always matched

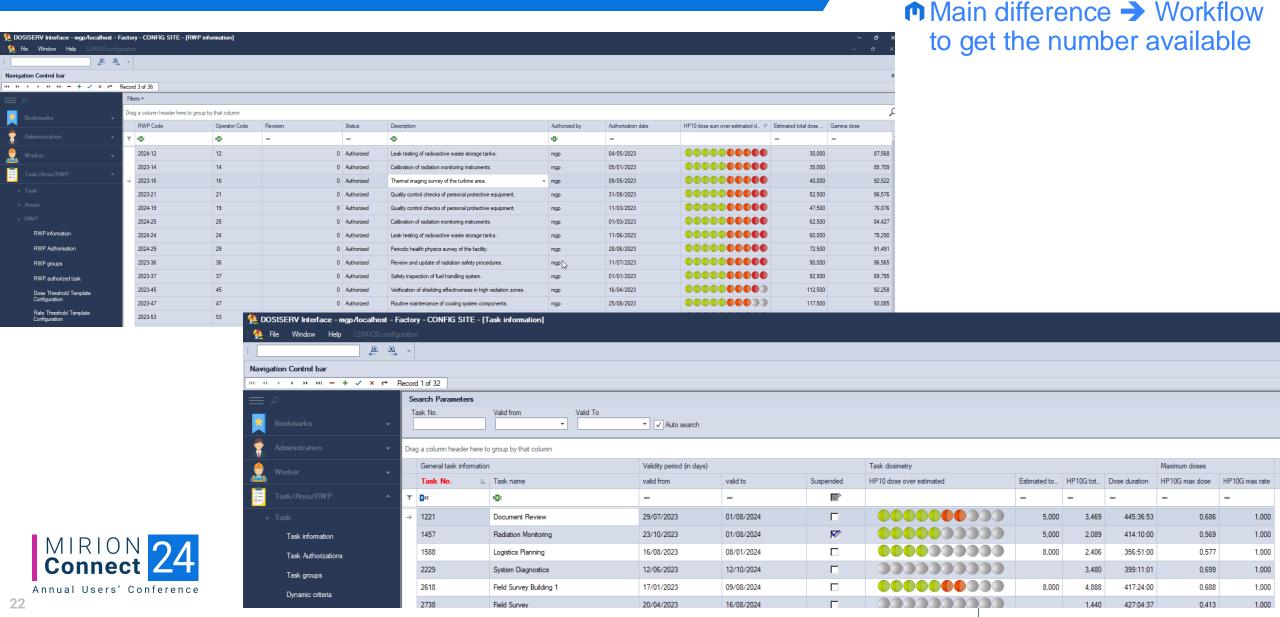


Dedicated Qualifications

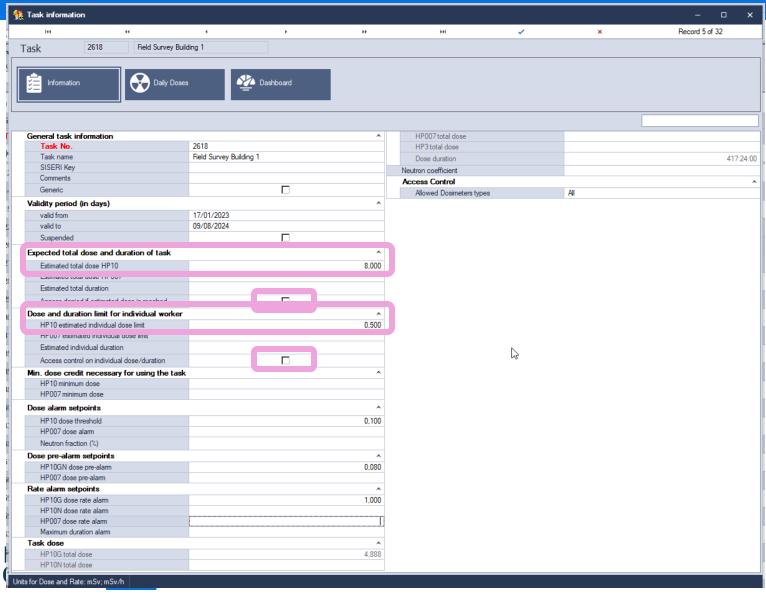
Criteria/qualification can be connected to a RWP (and/or a Task)



RWP / JOB (or Both)



Budgets



- ♠ Global budget for the Job
- Access still allowed?
- Dose per individual for that Job
- Access still allowed?

Budgets

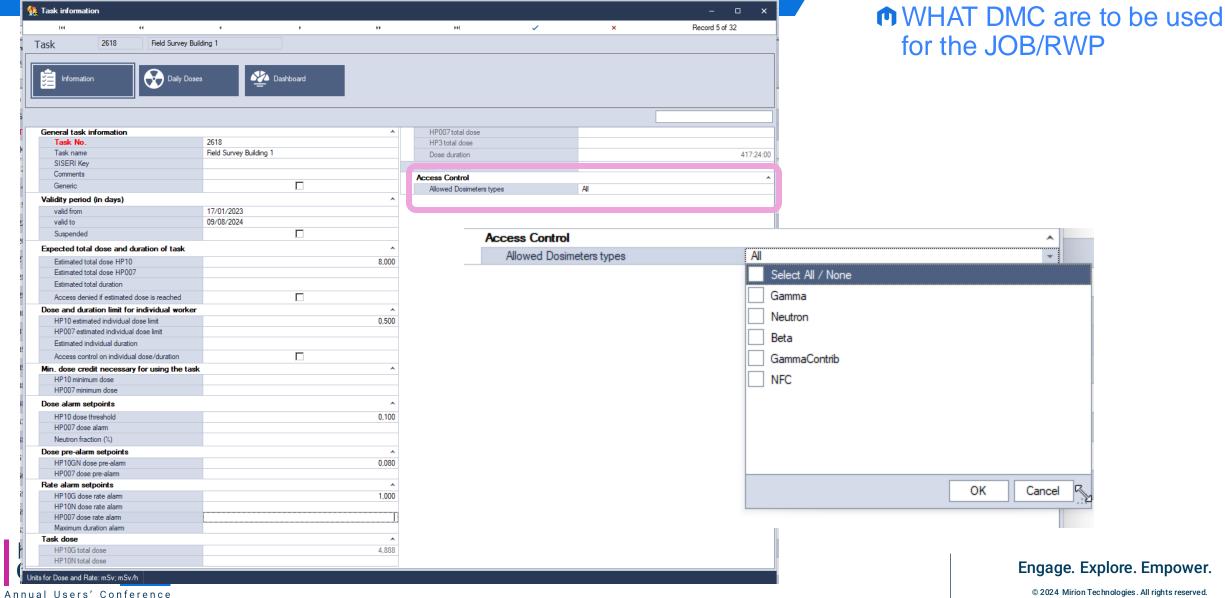
ag a column header here to group by that column

General task infom	nation	Validity period (in days)			Task dosimetry						
Task No.	Task name	valid from	valid to	Suspended	HP10 does over estimated	Estimated to	HP10G tot	D			
A BC	A □ C	=	=			=	=	=			
5999	Project Planning	16/05/2023	06/05/2024		000000000	1,000	2,903				
8171	Performance Review	12/06/2023	28/11/2024		000000000	2,000	3,661				
3179	Equipment Testing	17/06/2023	08/05/2024		000000000	4,000	3,647	Г			
5902	Inspect Safety Gear	06/10/2023	24/03/2024		000000000	5,000	4,020				
5160	Coolant System Check	27/11/2023	21/05/2024		000000000	6,000	4,377				
1221	Document Review	29/07/2023	01/08/2024		000000000000000000000000000000000000000	5,000	3,475				
2618	Field Survey Building 1	17/01/2023	09/08/2024		000000000	8,000	4,888				
3884	Safety Briefing	20/09/2023	11/01/2024		000000000000000000000000000000000000000	€/300	3,052				
7570	Technical Writing	15/07/2023	20/06/2024		00000000000	4,000	1,866				
8058	Inspect Safety Gear	12/04/2023	11/04/2024		000000000000000000000000000000000000000	4,000	1,838				
1457	Radiation Monitoring	23/10/2023	01/08/2024	⊠	00000000000	5,000	2,089				
1588	Logistics Planning	16/08/2023	08/01/2024		00000000000	8,000	2,406				
8408 Miriun	Hazard Assessment	12/12/2023	10/01/2024	П	0000000000		1,399				

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DMC Selection



DaskBoard

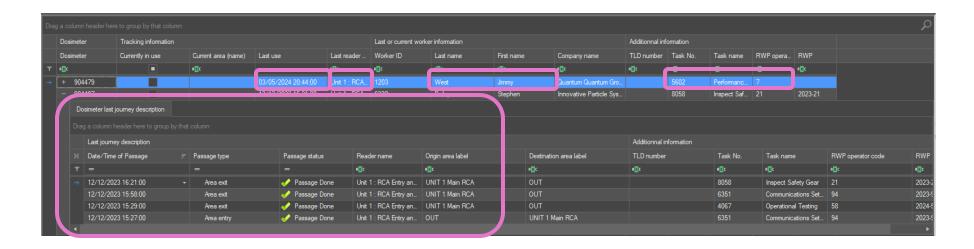
The daskBoard is a standalone application that do not need human interaction



Track a DMC

Based on serial number quickly access to

When it was used for the last time Where it was used for the last time Who used for the last time Last Job it was used for Zoom in





Smart offline

Improvement to make the reader smart offline even smarter

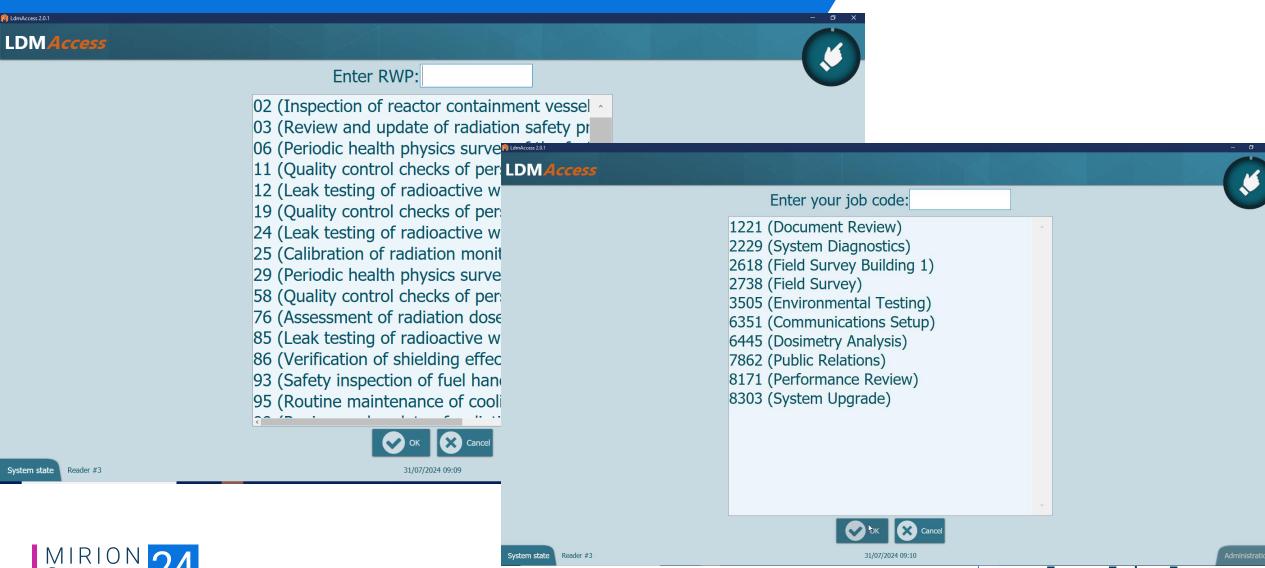
Check worker/task/RWP authorizations
Offer list selection
Program dosimeters based on Job code setting
Easy/on demand update







Help List on Reader at issuing time



Connect 24

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Personnal Limits Record 1 of 1000 Last Name: First name Insurance No. ID Number 1053 Castaneda Lamy (7) Dashboard Enforce access to controlled-area Individual alarm threshold Alarm threshold for dose rate and duration ^ Maximum duration thresh... Enforced Access Correction Coeff HP10G-HP10N HP007 Validity end date ^ Dose-"Limits" Daily limits 03/08/2024 Worker limits Monthly limits 31/08/2024 Dose Credits Validity end date Daily limits 03/08/2024 C NTRACTOR 31/08/2024 Monthly limits HP10 HP10 HP10 - Daily credits HP10 daily limit HP10 daily limit 0,200 HP10 - daily credit 0,200 HP10 daily limit HP10 daily limit 0,200 HP10 7 days limit HP10 7 days limit HP10 - 7 days credit HP10 7 days limit HP10 30 days limit HP10 30D limit HP10 - 30 days credit HP10 30 days limit HP10 30 days limit HP10 life limit HP10 life limit HP10 - Life credit HP10 life limit HP10 life limit HP10 P limit HP10 P limit HP10 - Monthly credits HP10 P limit HP10 P limit HP10 3P limit HP10 XP limit HP10 - 3P credit HP10 3P limit HP10 annual limit HP10 annual limit 1,000 HP10 - annual credit -1,460 1.000 HP10 annual limit HP10 annual limit HP10 5 years limit HP10 5 years limit HP10 - 5 years credit HP10 5 years limit HP10 5 years limit HP007 HP007 - Daily credits HP007 HP007 HP007 HP007 daily limit HP007 daily limit HP007 - daily credit HP007 daily limit HP007 daily limit HP007 7 days limit HP007 7 days limit HP007 - 7 days credit HP007 7 days limit HP007 7 days limit HP007 30 days limit HP007 30 days limit HP007 - 30 days credit HP007 30 days limit HP007 30 days limit HP007 life limit HP007 life limit HP007 - Life credit HP007 life limit HP007 life limit HP007 P Imit HP007 P Imit HP007 - Monthly credits HP007 P Imit HP007 P Imit HP007 XP limit HP007 - 3P credit HP007 3P limit HP007 XP limit HP007 XP limit HP007 annual limit HP007 annual limit HP007 - annual credit HP007 annual limit HP007 annual limit HP007 5 years limit HP007 5 years limit HP007 5 years limit HP007 - 5 years credit HP007 5 years limit B

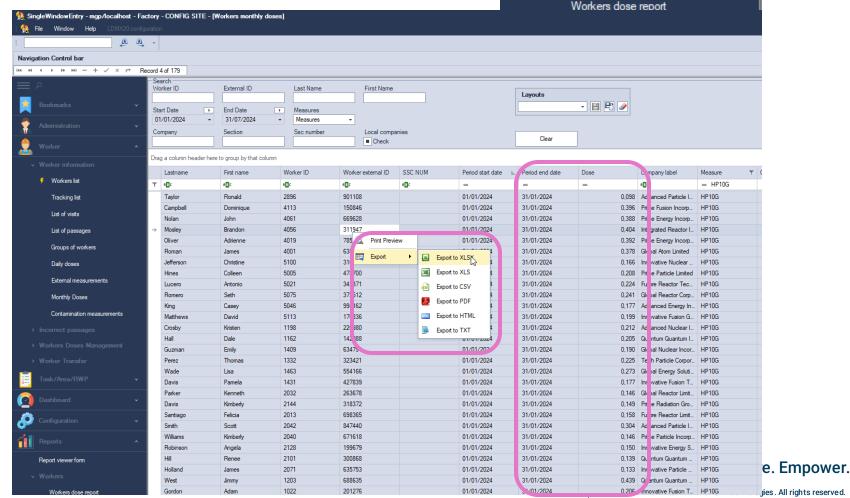
Daily dose Monthly Doses External Doses Initial doses Dosimetric summary

Reporting (Part1)

There are many ways to perform reporting in DosiServ

♠ DosiServ build in reports

↑ Local exports



Report viewer form



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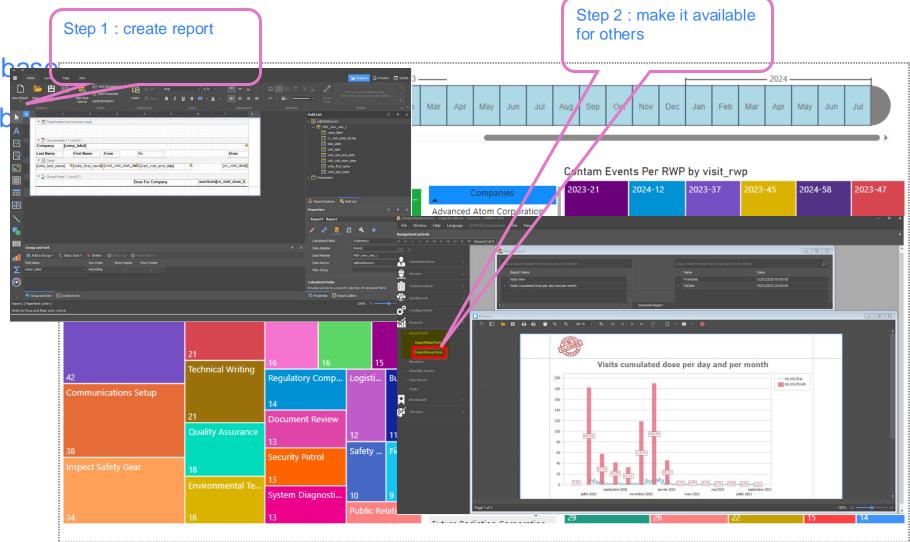
Reporting (Part 2)

Training

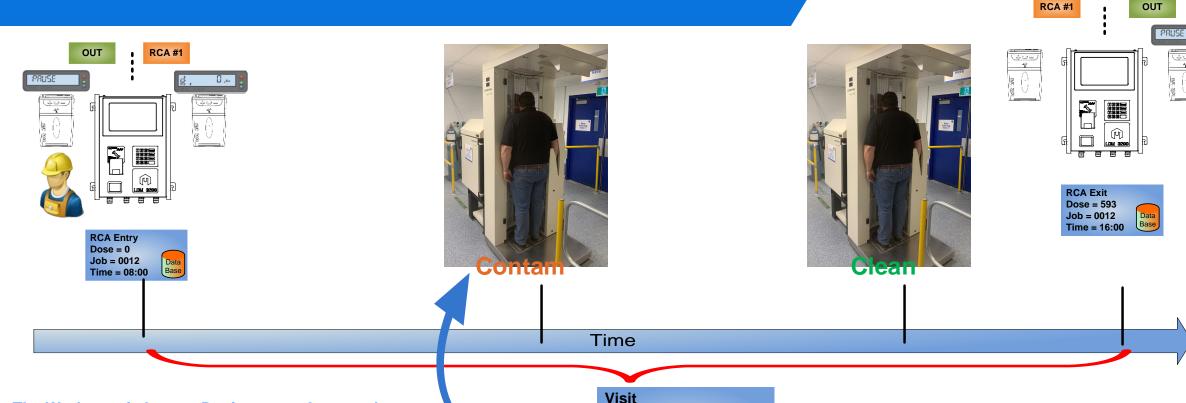
Excel direct into the database

Power BI direct into datab

Dedicated tool



Body monitors measurements



- 1. The Worker switches on Dosimeter and enters the zone
- 2. When exiting the Zone the worker will show a contam event in the monitor
- 3. Workers take necessary actions and finaly exits
- 4. Worker witch of dosimeter
- → DosiServ will record a visit for that person and the Job code

selected at entry time



The system will propose its best estimate in order to connect the visit with the Contam Event AND with the measurement results

Dose = 593

Job = 0012

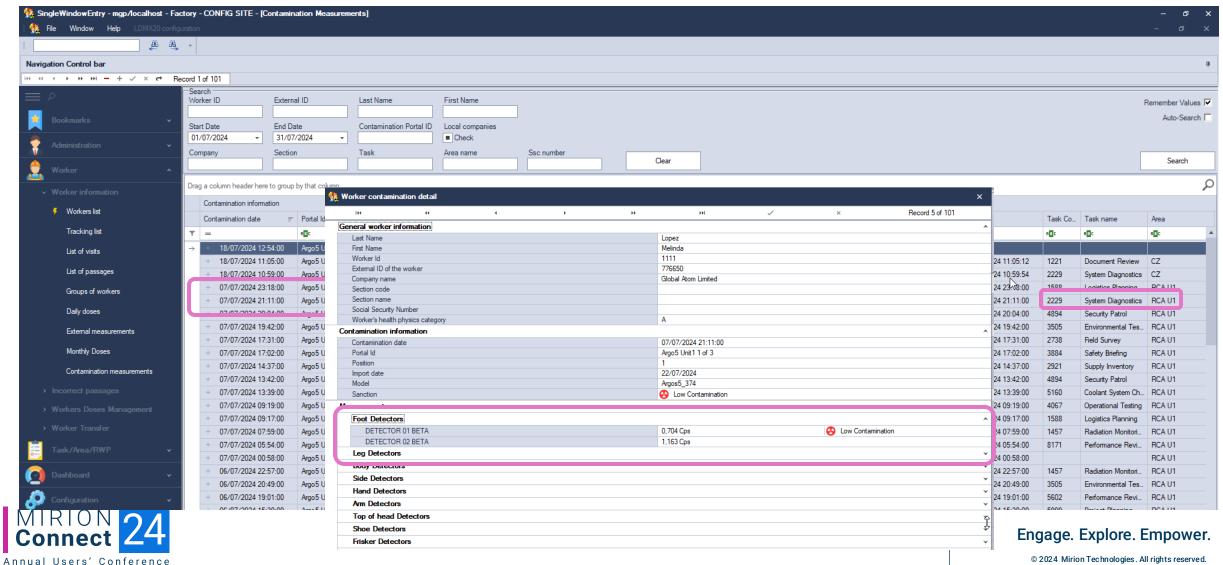
Duration = 08:00

Zone = RCA#1

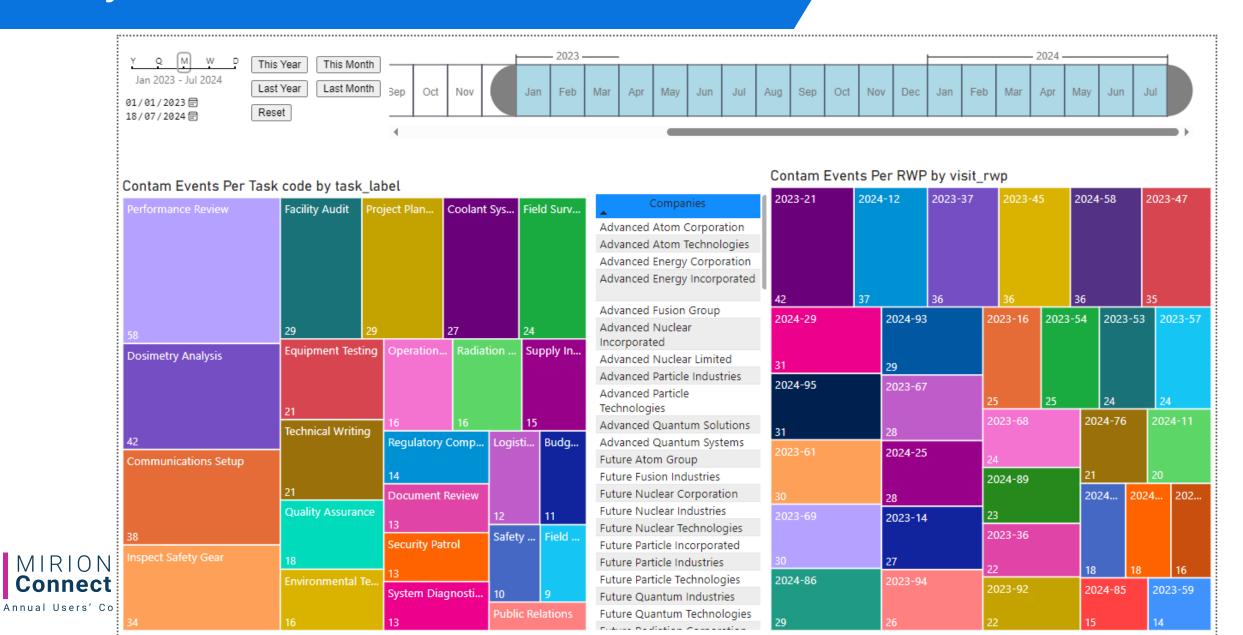
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Body monitors measurements



Body monitors measurements

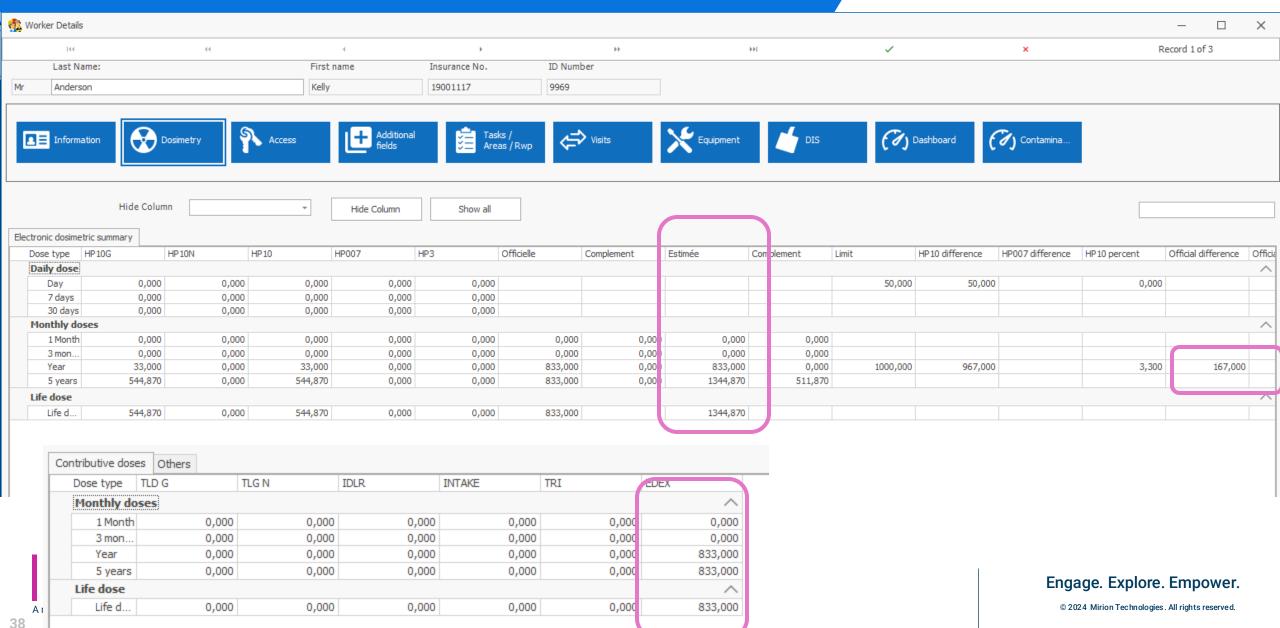


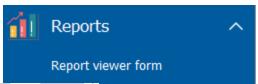
Coming Soon





NRC FORM 4 U.S. NUCLEAR REGULATORY COMMISSION APPROVED BY OMB NO. 3150-0005 EXPIRES: 11/30/2023 ♠ Form 4 Input (11-2020) 10 CFR PART 20 Estimated burden per response to comply with this mandatory collection request: 15 minutes. This information is require to record an individual's lifetime occupational exposure to radiation to ensure that the cumulative exposure to radiation **CUMULATIVE OCCUPATIONAL DOSE HISTORY** does not exceed regulatory limits. Send comments regarding burden estimate to the Information Services Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects Resource@nrc gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0005), Attn: Desk Officer for the • Form 5 Output Nuclear Regulatory Commission, 725 17Street NW, Washington, DC 20503; e-mail: oira_submission@omb.eop.gov The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the *Note: Social Security Numbers must not be visible on the outside of any package sent by mail. document requesting or requiring the collection displays a currently valid OMB control number. Form4 Import Form X YPE DATE OF BIRTH (MM/DD/YYYY) 6. Monitoring Start 6. Monitoring End 8. Licensee Number 7, Licensee Name 9. Dose Type Exposure 15/03/2024 NPF-73 01/03/2024 RECORD → | ROUTINE 11a, EDEX 11b, DDE 13, SDE, WB 14. SDE, ME 15. CEDE 16, CDE TEDE 18, TODE 0,200 ND ND ND ND ND ND ND MO JITORING PERIOD (MM/LD/YYYY = MM/DD/YYYY 8. LICENSE NUMBER 7. LICENSEE NAME 9. 10. RECORD ROUTINE ESTIMATE NO RECORD 11a, EDEX 11b. DDE 12. LDE 13. SDE,WB 14. SDE_ME 15. CEDE 16. CDE 17. TEDE **18. TODE** 8. LICENSE NUMBER MONITORING PERIOD (MM/DD/YYYY = MM/DD/YYYY) 7. LICENSEE NAME RECORD ROUTINE 0,600 ND ND ND ND ND RECORD ROUTINE PSE NO RECORD 17. TEDE 18. TODE RECORD ROUTINE ESTIMATE PSE New Period NO RECORD 17. TEDE 18, TODE 19. Sign. of indivifual 21. Certifying Organization 22. Sign. of Designee NATURE OF DESIGNEE 23. DATE SIGNED wer. All Doses in rem





rs dose report

rs list report

out report

denial

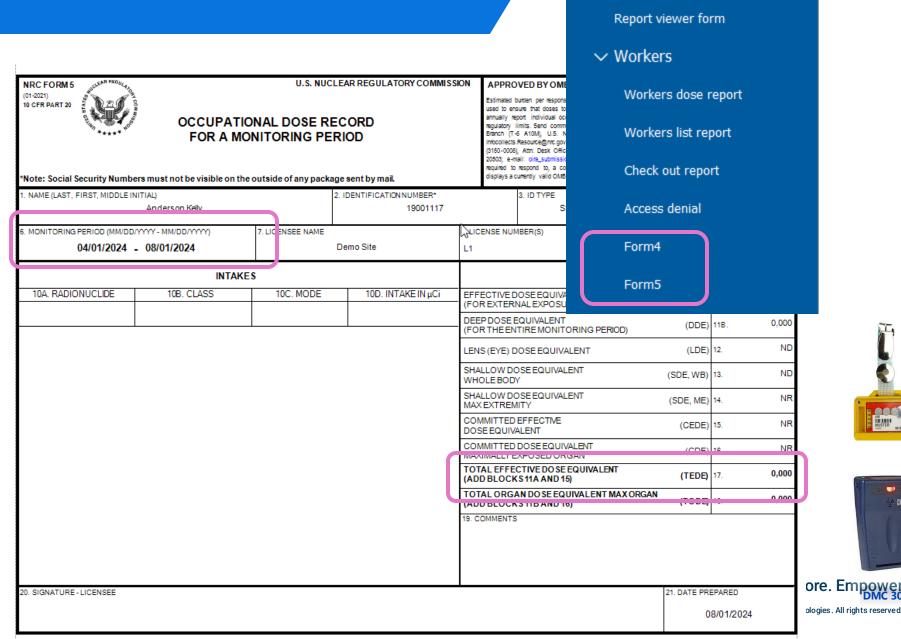
form 4 (

NRC FORM 4							SION	APPF	ROVED BY OMB NO. 3					
(11-202 0) 10 CFR PART 20	****	CUMULATIVE OCCUPATIONAL DOSE HISTORY bers must not be visible on the outside of any package sent by mail.						Estimated burden per response to comply with this mandatory collection request: 20 minutes. This information is used to ensure that doses to individual do not exceed regulatory limits. This information is required to record annually report individual occupational exposure to radiation to ensure that the exposure does not exceed regulatory limits. Send comments regarding burden estimate to the FOIA, Library, and Information Collection Branch (T-5 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nc.gov, and the OME reviewer at OME Office of Information and Regulatory Affairs (\$150-0005), Afthr. Desk Officer for the Nuclear Regulatory Commission, 725 17th Street NW, Washington, DC 2050s; e-mail: oira_submission@omb.eop.gov. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.						
1. NAME (LAST, FIRST, MIDDLE INITIAL)						2. IDENTIFICATION NUMBER			3. ID TYPE	4. \$		5. DAT	E OF BIRTH	
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19. SIGNATURE OF MONITORED INDIVIDUAL			20. DATE SIGNED	21. CERTIFYING ORGANISATION				22. SIGNATURE OF DESIGNEE					23. DATE SIGNED	
				LLWR REPOSITORY										

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MIRION

♠ Form 5 Output



Reports



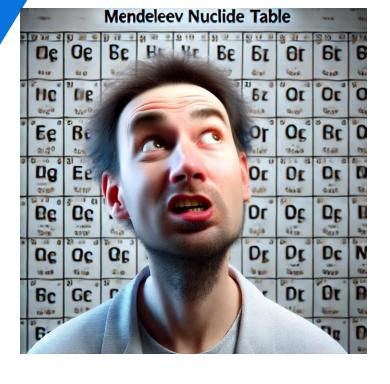




Additionnal features

- Source Control
- Nuclide library
- Intakes fct
- Equipment's
- PII (Personal Identifiable Information)
- Document attach







Thank you



