Da Vinci Smart Manufacturing

BRD S03.01 User Access Control_Roles

Version History:

Version	Created/Modified by	Description	Date
1.0	Leopoldo Rivera Sahana Badal	S03.01 V2.0	07/3/2025

1. Introduction

This document outlines the business and functional requirements for the enhanced User Access Control – Roles Management module within the Da Vinci Smart Manufacturing platform. This module empowers authorized administrators to define and maintain role-based access policies across the system.
Key functionalities include the ability to create, clone, edit, assign, and deactivate roles, while mapping permissions to specific modules, assigning users to roles, and configuring role-level access to dashboard KPIs. The objective is to implement a secure and scalable Role-Based Access Control (RBAC) framework, ensuring that users only access features and data relevant to their responsibilities.

2. Roles Management Interface

The Roles Management interface serves as the central control panel for administrators to view, monitor, and manage all defined roles within the Da Vinci Smart Manufacturing system. It is designed to be user-friendly, data-rich, and optimized for both operational clarity and administrative efficiency.

Navigation and Layout

- Located within the User Access Control module.
- The left-side navigation panel provides quick access to modules like Users, Roles, Master Data, Core Process, and Reports.
- The main content area is structured as a clean, paginated table with interactive controls at the top and bottom.

2.1. Header Section

The header must always be visible and contains the following

- **Title**: "Roles”
- **Action Buttons in Header:**
  - Add Role: Button to create a new User
- Role Summary Counters
  - Active – indicates the total number of currently active roles.
  - Inactive – shows the number of roles that are currently inactive.
- A search bar allows users to quickly locate roles by name. Tooltip text: Search by Role Name
- An expandable Filters control will support additional filtering options

- Status
  - Multi-select Dropdown
  - All Status corresponding to Roles
- Clear Filter - This will clear all the applied filters
- All Filter drop downs should be sorted alphabetically / numerically
- Filter options will not reset unless the user navigates to a different menu or module. This means any filters applied will persist as long as the user remains within the same menu option, ensuring continuity until a module change occurs.

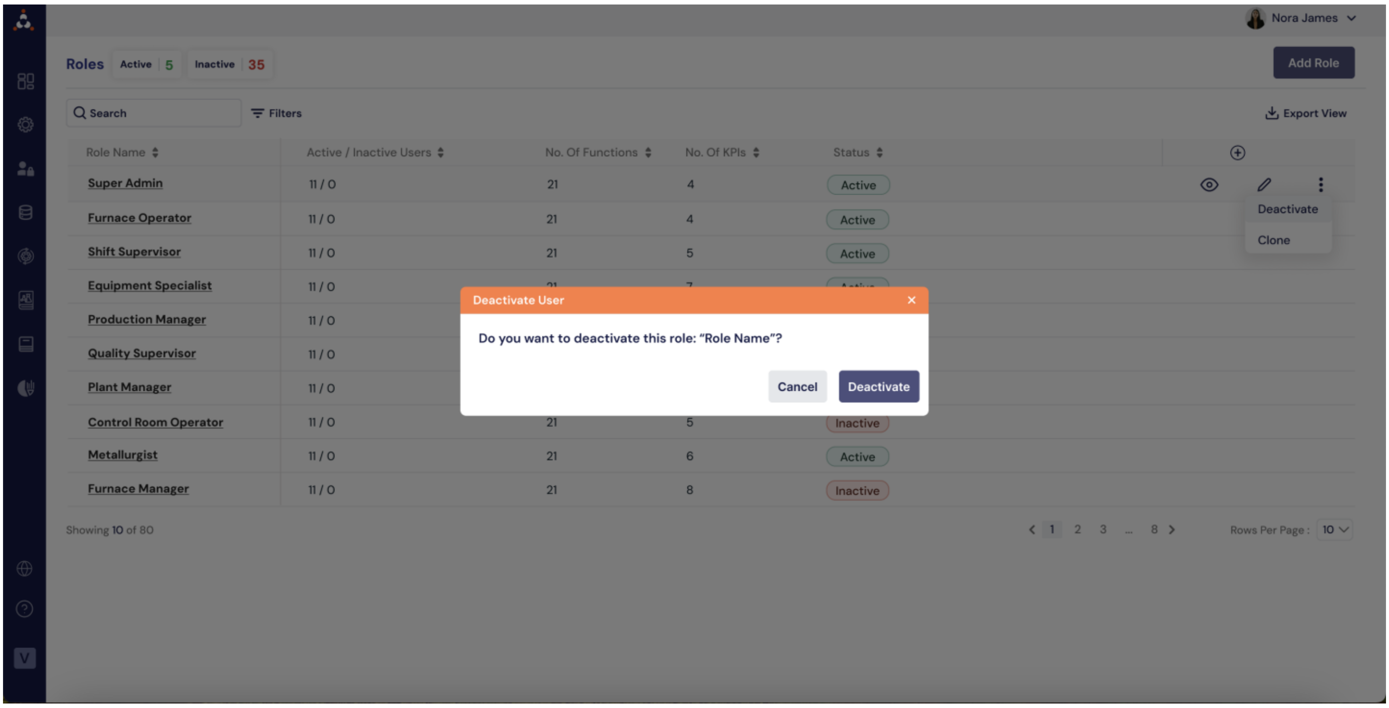
2.2. Role Table Structure

Each role is displayed as a row with the following information:

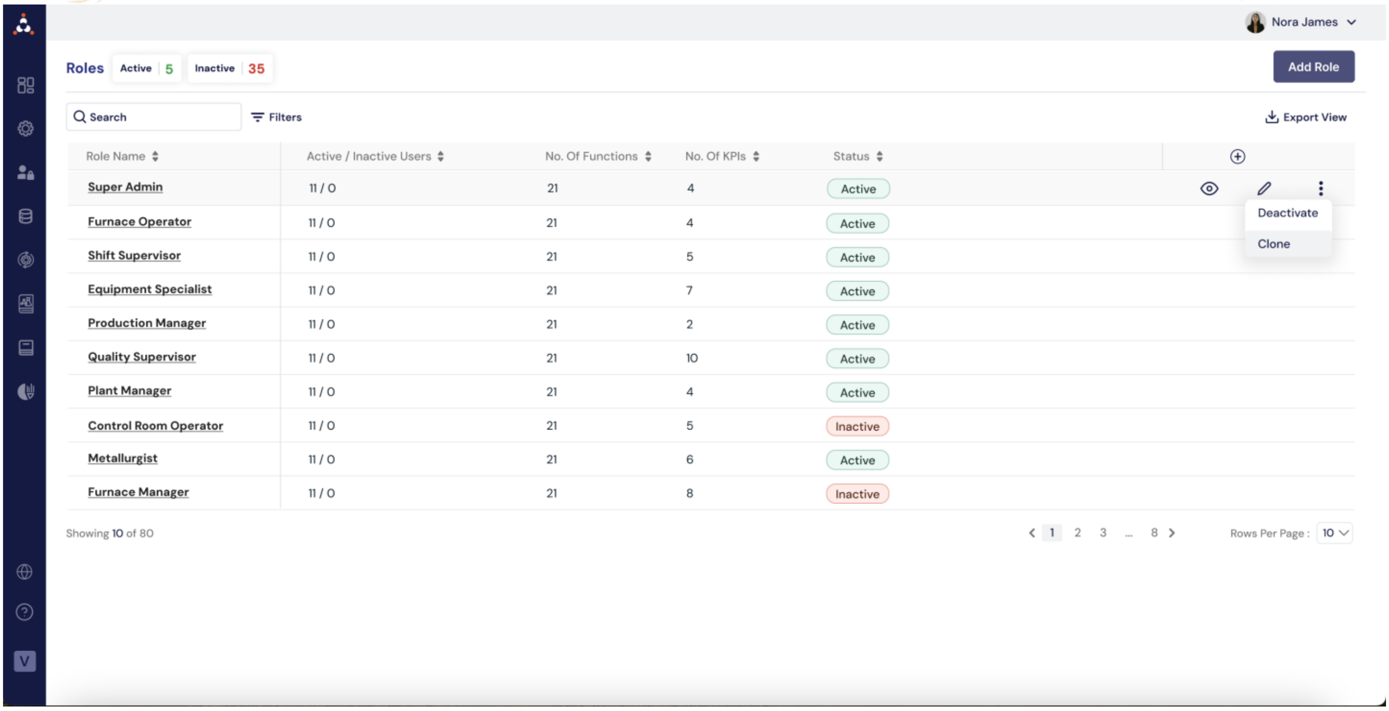
Table Default Sorting: Latest Modified first

- Role Name
  - Displayed as a hyperlink; clicking navigates to the details page in view mode
  - Sorting: Yes
  - Frozen – Yes
- Active / Inactive Users
  - Shows the number of users assigned to the role, split into active and inactive counts.
  - Sorting: No
  - Frozen - No
- No. of Functions
  - Displays how many functions are mapped to that role.
  - Sorting: Yes
  - Frozen – No
- No. of KPIs
  - Displays how many KPIs are mapped to that role.
  - Sorting: Yes
  - Frozen – No
- Status
  - marked as Active (green badge) or Inactive (red badge).
  - Sorting: Yes
  - Frozen – No
- Created At
  - Date and time of record creation
  - Sorting: Yes
  - Frozen – No
- Created By
  - User ID | First Name Last Name of user who created the record

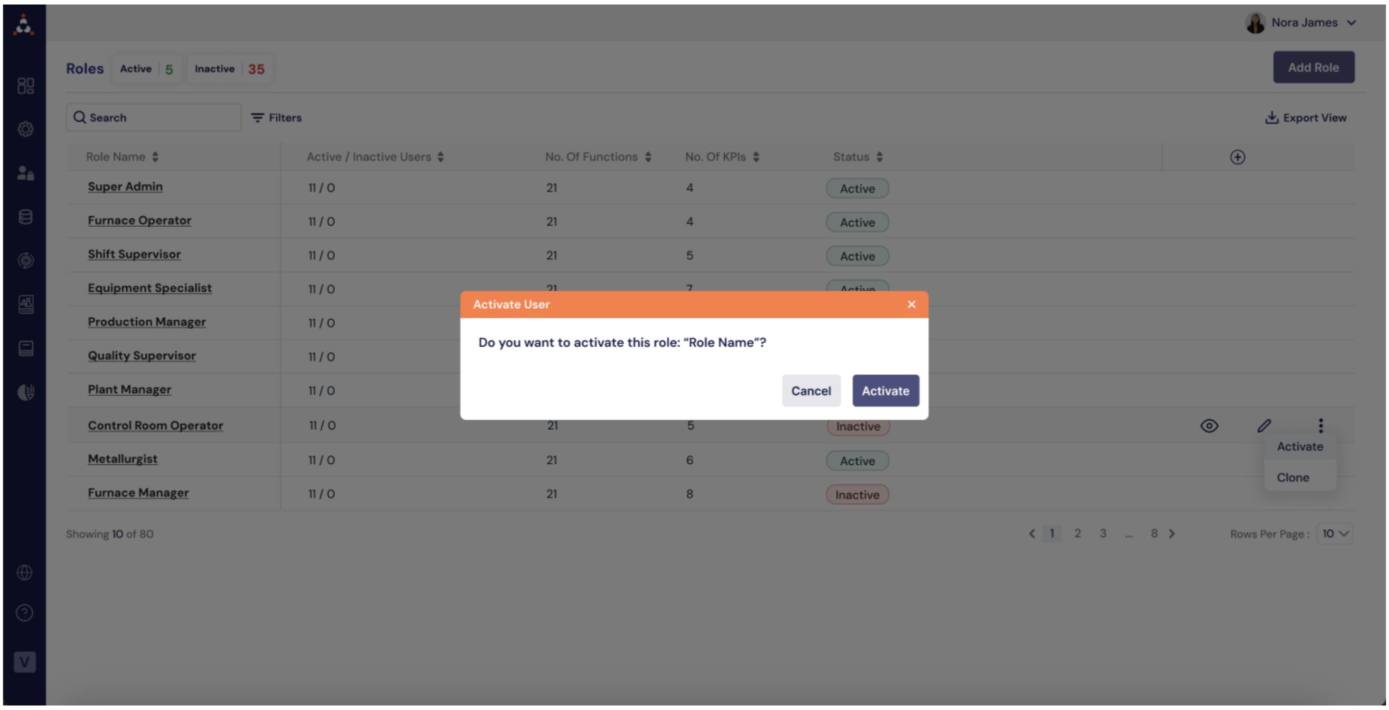
- Sorting: Yes
    - Frozen – No
- Modified At
    - Last record modified Date and time
    - Sorting: Yes
    - Frozen – No
- Modified By
    - User ID | First Name Last Name of user who last modified the record
    - Sorting: Yes
    - Frozen – No
- **Action Buttons:** Depending on the status, users can perform the following actions
    - Active:
        - View – View details of roles in read only mode
        - Edit - Allows to edit role details
        - Deactivate – Role can be deactivated after confirming the prompt that reads, "Do you want to deactivate this role: "Role Name"?



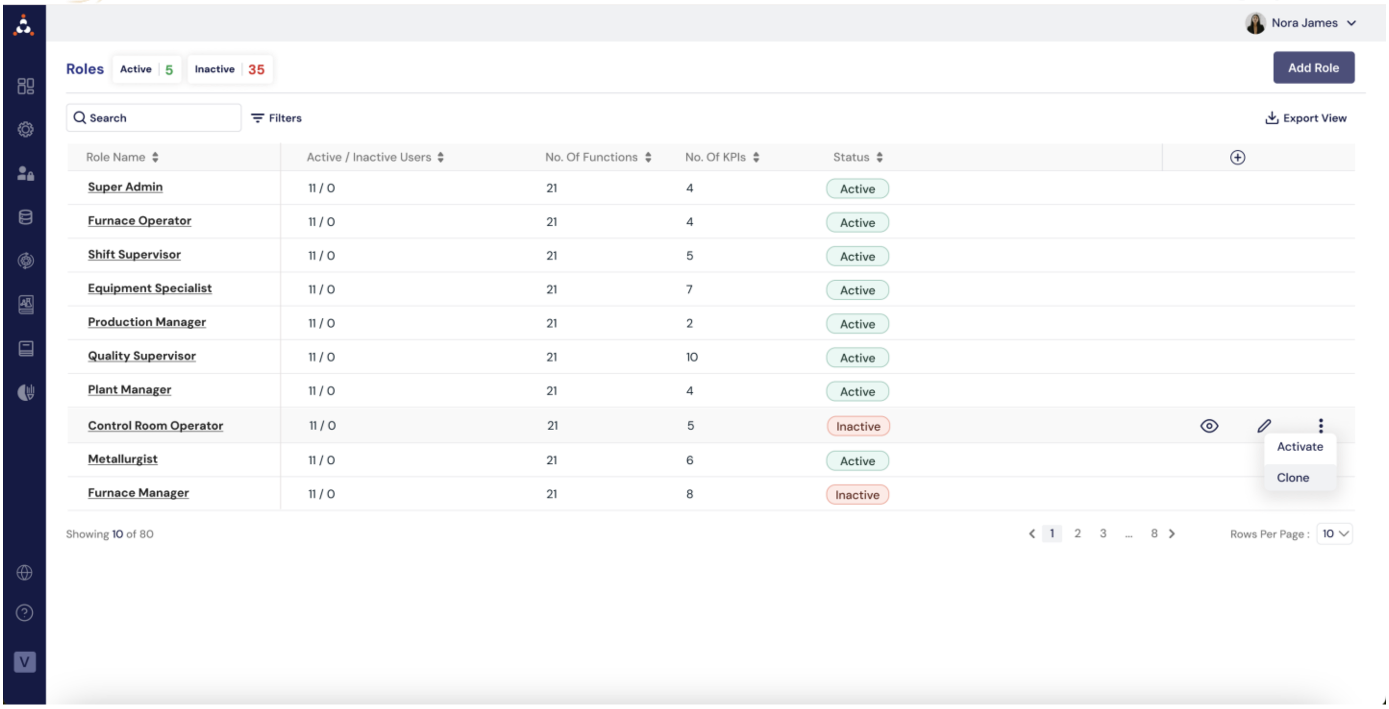
        - Clone - Opens a page pre-filled with the original role's settings (Permission Management and KPI Management, User Management will not be cloned) allowing users to modify and save the cloned role. **CR-VD-4791**



- o Inactive
  - ▪ View – View details of roles in read only mode
  - ▪ Activate– Role can be activated after confirming the prompt that reads, “Do you want to activate this role: “Role Name”?



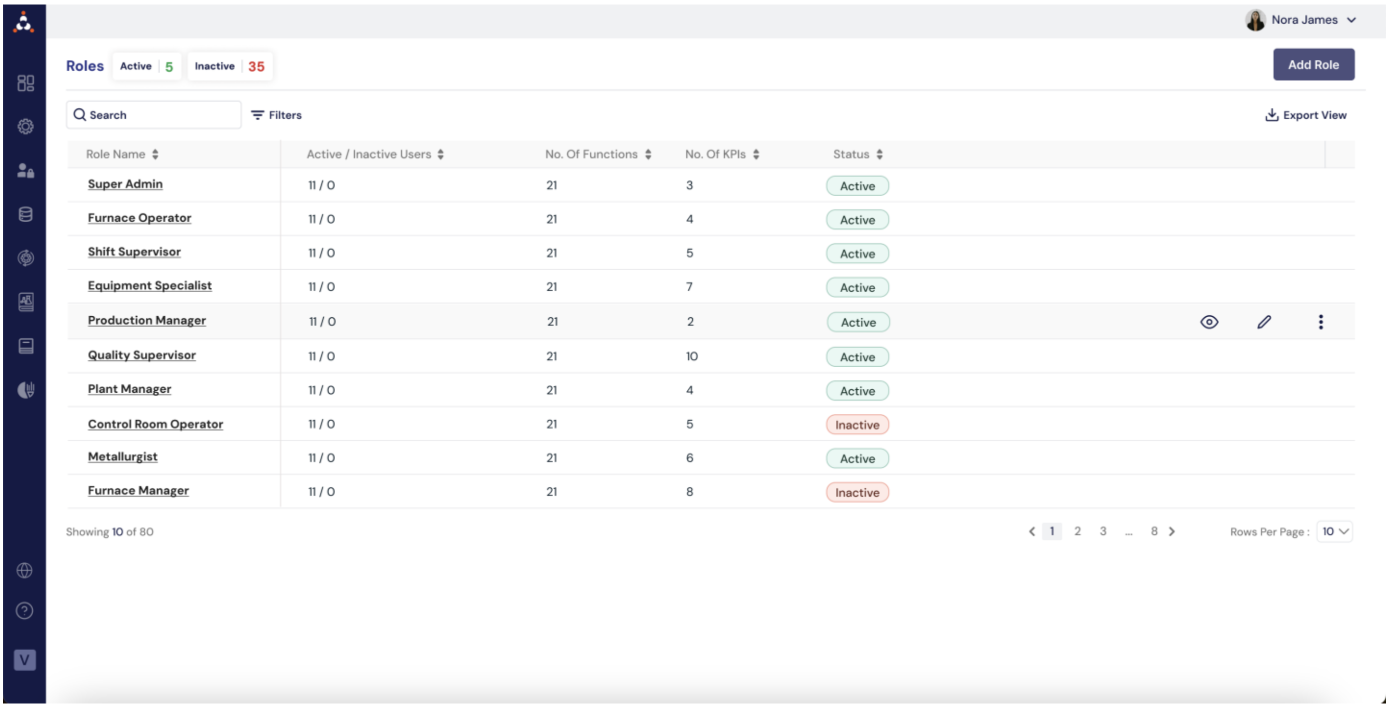
- ▪ Clone - Opens a page pre-filled with the original role’s settings (Permission Management and KPI Management, User Management will not be cloned) allowing users to modify and save the cloned role. **CR-VD-4791**



- **Pagination Controls**:
  - Navigation buttons to browse through multiple pages of records, if applicable (for more than 10 records).
  - Rows Per page: Default 10, Dropdown values: 10, 20, 30, 40, 50
- **Export:** The export function must extract ALL the information of the list of records shown based on the combined results of filter selection, sort and search criteria. Tooltip to Export button will read “Download CSV”
  - **Exported File Name**: Roles_DD-MM-YYYY

<table>
<tr><th>Role Name</th><th>Active</th><th>Created At</th><th>Created By</th><th>Modified At</th><th>Modified By</th><th>Inactive</th><th>No. Of Functions</th><th>No. of KPIs</th><th>Status</th></tr>
<tr><td>Manager</td><td>0</td><td>26/03/2025 | 02:52 PM</td><td>Sahana | Sahana Badal</td><td></td><td>Sahana | Sahana Badal</td><td>0</td><td>6</td><td>12</td><td>Inactive</td></tr>
<tr><td>autouserrole</td><td>0</td><td>26/03/2025 | 02:52 PM</td><td>Sahana | Sahana Badal</td><td>26/03/2025 | 02:52 PM</td><td>Sahana | Sahana Badal</td><td>0</td><td>21</td><td>2</td><td>Active</td></tr>
<tr><td>Lab Analysist</td><td>0</td><td>26/03/2025 | 02:52 PM</td><td>Sahana | Sahana Badal</td><td></td><td>Sahana | Sahana Badal</td><td>1</td><td>3</td><td>5</td><td>Active</td></tr>
</table>

SuperAdmin	13	26/03/2025 | 02:52 PM	Sahana | Sahana Badal	26/03/2025 | 02:52 PM	Sahana | Sahana Badal	0	21	4	Active
string	0	26/03/2025 | 02:52 PM	Sahana | Sahana Badal	26/03/2025 | 02:52 PM	Sahana | Sahana Badal	0	0	2	Active
super	5	26/03/2025 | 02:52 PM	Sahana | Sahana Badal	26/03/2025 | 02:52 PM	Sahana | Sahana Badal	0	15	6	Active
Testing	1	26/03/2025 | 02:52 PM	Sahana | Sahana Badal		Sahana | Sahana Badal	0	21	1	Active
Test	0	26/03/2025 | 02:52 PM	Sahana | Sahana Badal		Sahana | Sahana Badal	0	21	4	Active



3.1. Role Creation

The **Add Role** functionality enables administrators to create new roles in the system and configure their access permissions, user assignments, and dashboard KPI visibility. The role creation process is divided into **three tabs**:

1. Permission Management
2. User Management
3. Dashboard KPIs Management

Header:

- Back Icon | Add Role
- Clone Role Button -
  - A "Clone" button will be available in the add screen.
  - When the clone icon is clicked, a new popup opens to select the role which in turn opens a page pre-filled with the original role's settings (Permission Management and KPI Management, User Management will not be cloned) allowing users to modify and save the cloned role.

Admins or users with create/edit permissions can create a new role by assigning a role name and selecting specific permissions in permission management.

Each tab captures specific details required to fully define a role in the system.

3.1.1. Permission Management

User enters the Role Name

- Field: Role Name
- Type: Text input
- Mandatory: Yes
- Validation: must be unique, alphanumeric, Min Limit 4, Max Limit 50, Space allowed
- Default Value: None

Permission Mapping

- Permissions can be assigned to various **functions**, organized under **modules**, which are further grouped into the following logical categories:
  - System Admin
  - User Access Control
  - Master Data
  - Core Process
  - Lab Analysis
  - Log Book
  - Reports
- Each module expands to display one or more functions.

Permission Types

Each function supports the following permission types:

- **View**: Grants read-only access
- **Create/Edit**: Grants ability to add or modify data
- **Delete**: Grants ability to remove data or configurations

Some permission types may be disabled if not applicable to the respective function/screen.

Bulk Selection

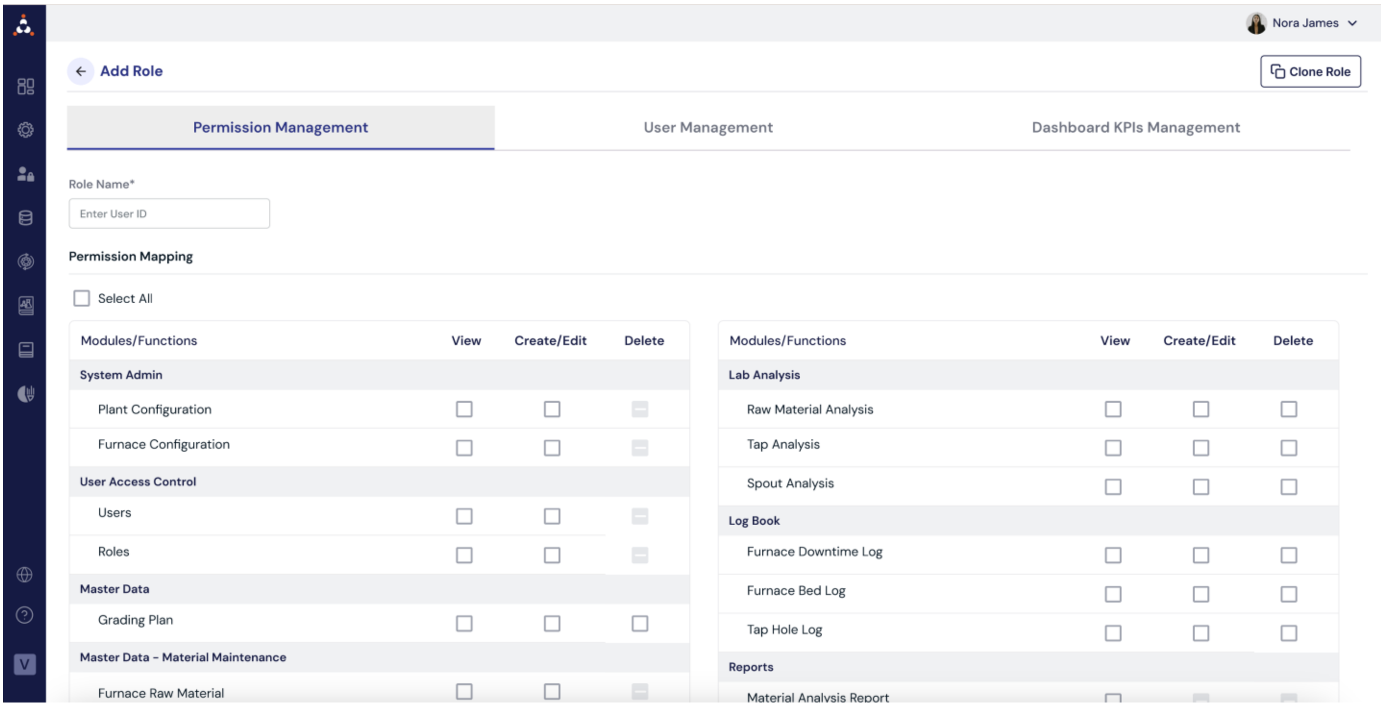
- A **"Select All"** checkbox is provided at the top of the permission matrix.
  - Action: Applies **View**, **Create/Edit**, and **Delete** permissions across **all modules and functions**.

Validation Rules

- **No mandatory permission**: Users can assign any combination of permissions. Role can be created without any permission assigned. **CR- VD-3015**
- **No restrictions**: Any permission can be assigned to any user; there are no system-imposed constraints. **CR- VD-3015**

Actions

- **Save & Continue**: Saves the role and moves to the **User Management** tab
- **Cancel**: Discards changes and exits the role creation flow
- Upon successful save, a **confirmation message** is displayed indicating the role has been created



3.1.2. User Management

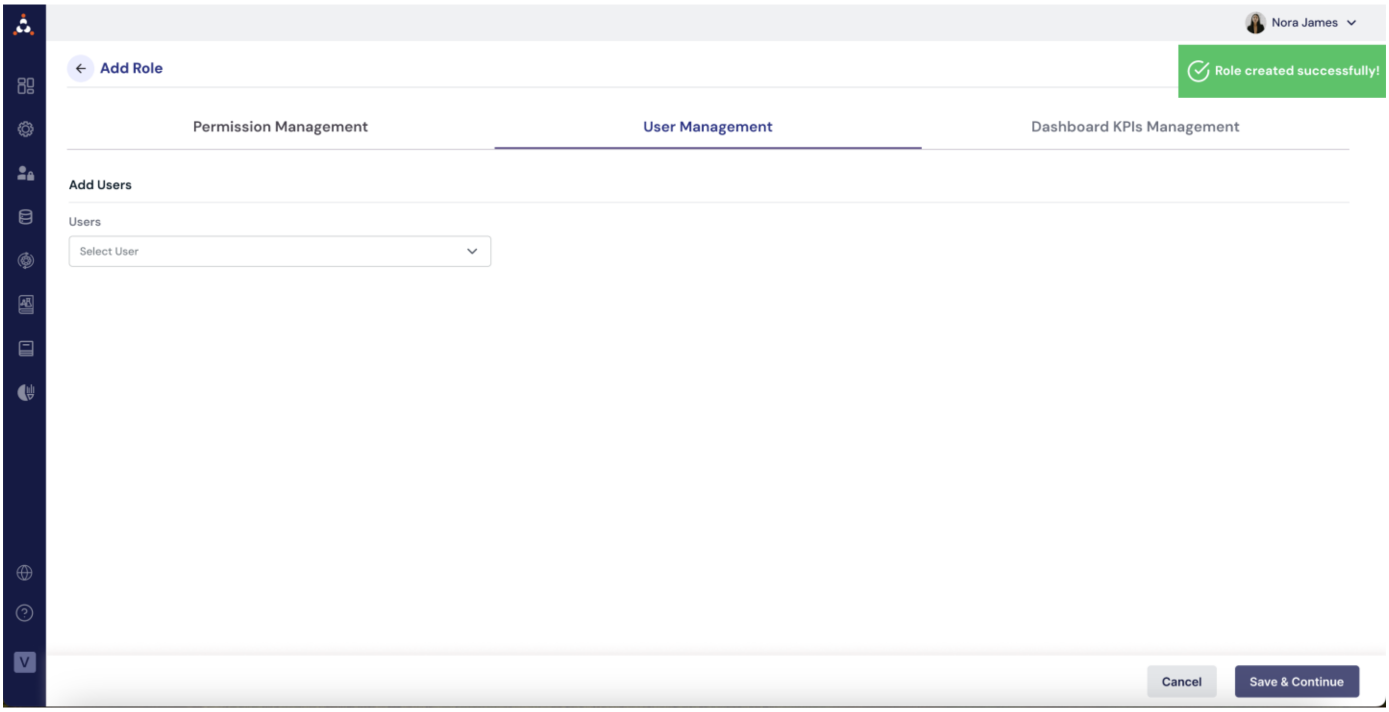
Assign Users to Role

- New users can be added via a **multi-select searchable dropdown** labeled "Users".
- The dropdown lists all **active users** and supports search by **name or ID**.
- Once selected, users are displayed as pills in the format: userID | FirstName LastName
- (e.g., tester01 | Tester BB)
- On Hover User can read from a tooltip which shows the entire User ID | First Name Last Name | Status

- Inactive users are visually distinguished with a darker pill background. **CR-VD-4483**

Actions

- **Save & Continue**: Saves user-role mapping and moves to **Dashboard KPIs Management** tab
- **Cancel**: Discards changes and exits the role creation flow



3.1.3. Dashboard KPIs Management

KPI Mapping

- Users can assign one or more KPIs to the role.
- KPIs are grouped under **modules**, consistent with the module categorization used in permissions.
- KPIs are grouped into the following functional categories:
  - Inventory
  - Financial
  - Production
  - Quality
  - EHS (Environment, Health & Safety)
  - Maintenance Metrics
- KPI Examples by Category
  - **Inventory**:
    - Material Consumption
    - On-Time Delivery (%)
  - **Financial**:
    - Total Revenue ($)
    - Profit Margin (%)
    - ROI on Investments (%)
  - **Production**:
    - Quantity Produced

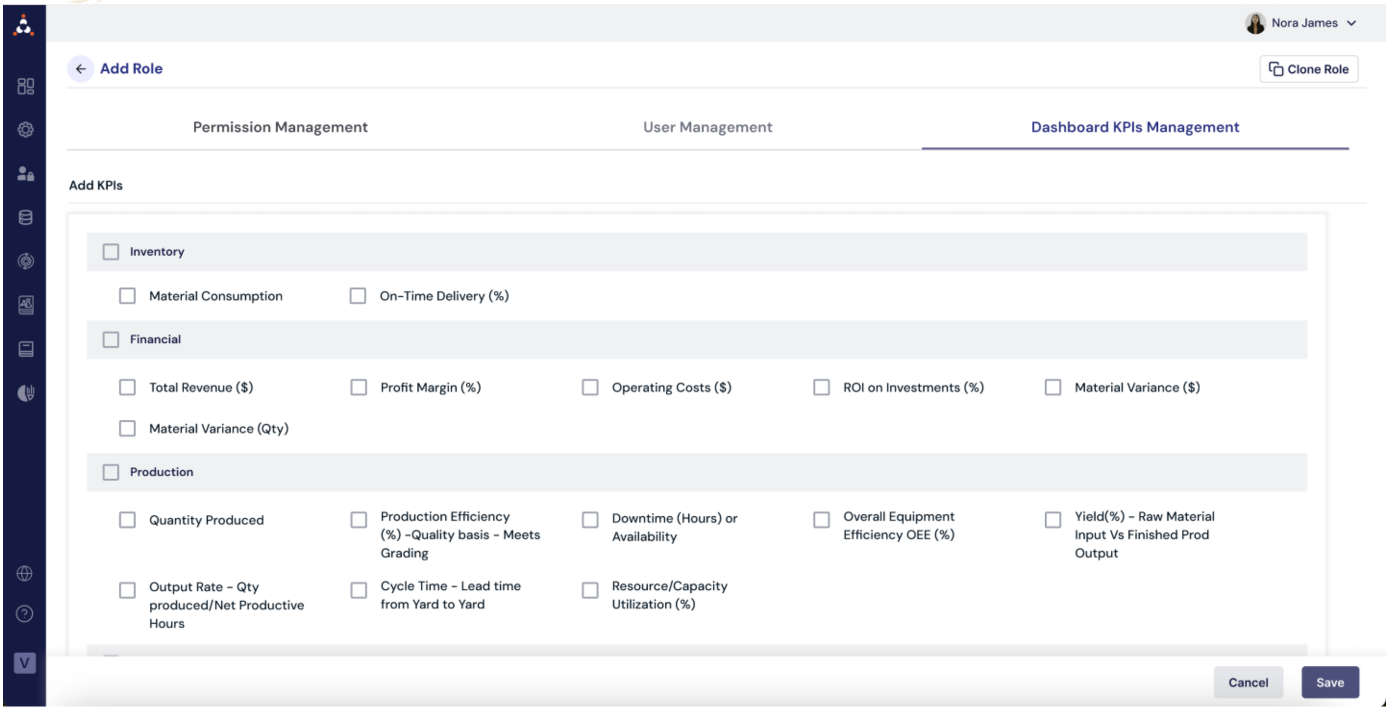
        - Downtime (Hours)
        - OEE (%)
        - Cycle Time
        - Yield (%)
    - **Quality**:
        - Defect Rate (%)
        - Rework Rate (%)
        - First Pass Yield (FPY)
    - **EHS**:
        - Energy Used (kWh)
        - Safety Incidents Reported
        - Training Compliance (%)
    - **Maintenance**:
        - MTTR
        - MTBF
        - Maintenance Compliance (%)
- Each KPI is displayed with a checkbox. Users can selectively assign KPIs to the role.
- When a KPI is selected, the role will have **View and Edit access** to that KPI on the dashboard.

Bulk Selection

- A **Select All** option is available at the **module level**, allowing users to select all KPIs within that module at once.

Actions

- **Save**: Saves KPI mapping and navigates to the **roles list page**
- **Cancel**: Discards changes and exits the role creation flow



3.2. Edit Role

The **Edit Role** functionality enables administrators to modify existing role details including the role name, assigned permissions, user-role mappings, and KPI access. The interface mirrors the “Add Role” flow but pre-populates existing data, allowing seamless updates.

The editing process is distributed across three tabs:

1. Permission Management
2. User Management
3. Dashboard KPIs Management

Users can navigate between tabs using **“Save & Continue”** buttons or by clicking directly on tab headers.

Header: Back Icon | Edit “Role Name”

3.2.1. Permission Management

Role Name

- **Field**: Role Name
- **Type**: Editable text input
- **Validation**:
  - Mandatory
  - Must be **unique across all roles**
  - alphanumeric, Min Limit 4, Max Limit 50, Space allowed
  - Default Value: None

Permission Mapping

- Existing permissions for the selected role are **pre-populated** in the permission matrix.
- Permissions can be **modified, added, or removed** as needed.

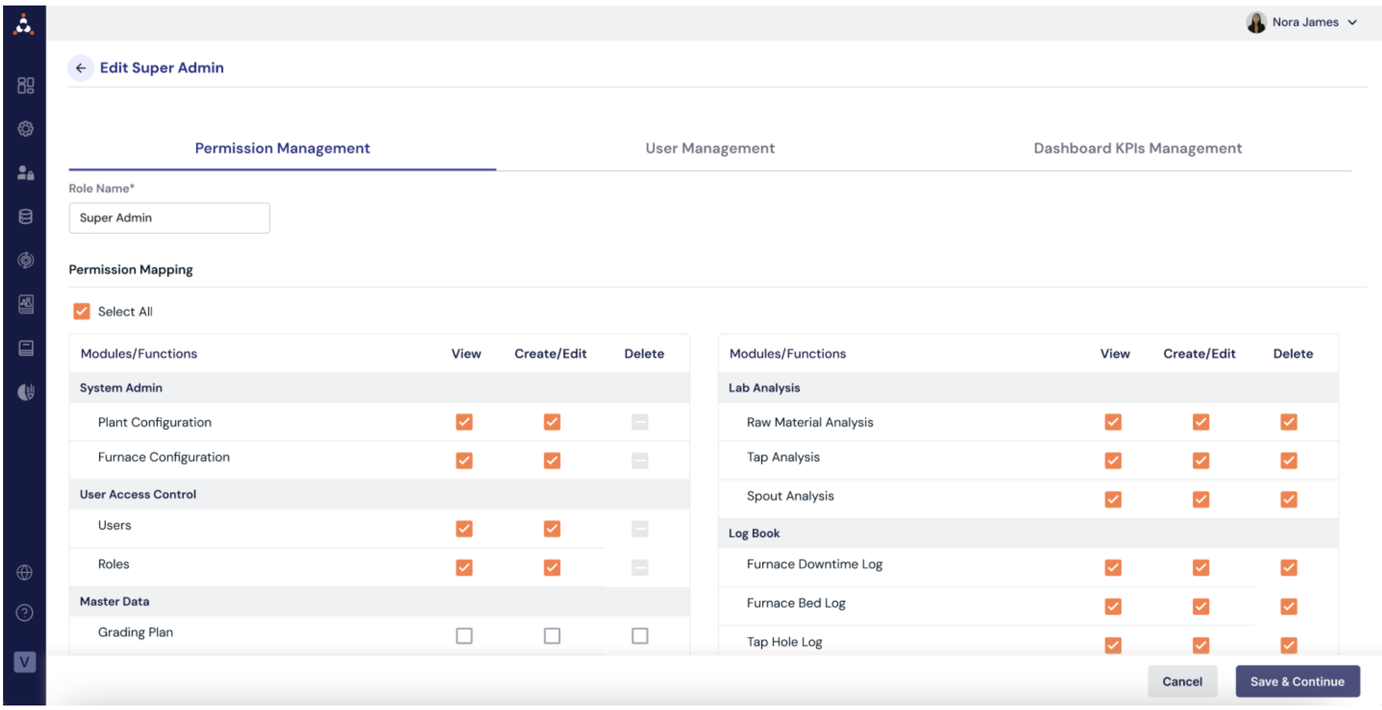
Permission Structure

- Functions are organized under **Modules**, which are grouped into these categories:
    - System Admin
    - User Access Control
    - Master Data
    - Core Process
    - Lab Analysis
    - Log Book
    - Reports
- Each function supports the following permission types:
    - **View** – Read-only access
    - **Create/Edit** – Modify or add data
    - **Delete** – Remove data or configurations

Non-applicable permissions for certain functions are disabled (read-only UI state).

Actions

- **Save & Continue**: Saves changes and navigates to **User Management** tab
- **Cancel**: Exits without saving
- Users can also navigate directly to the next tab via tab header



3.2.2. User Management

Existing Users

- All users currently mapped to the role are **pre-listed as pills**.

Assigning Users to Role

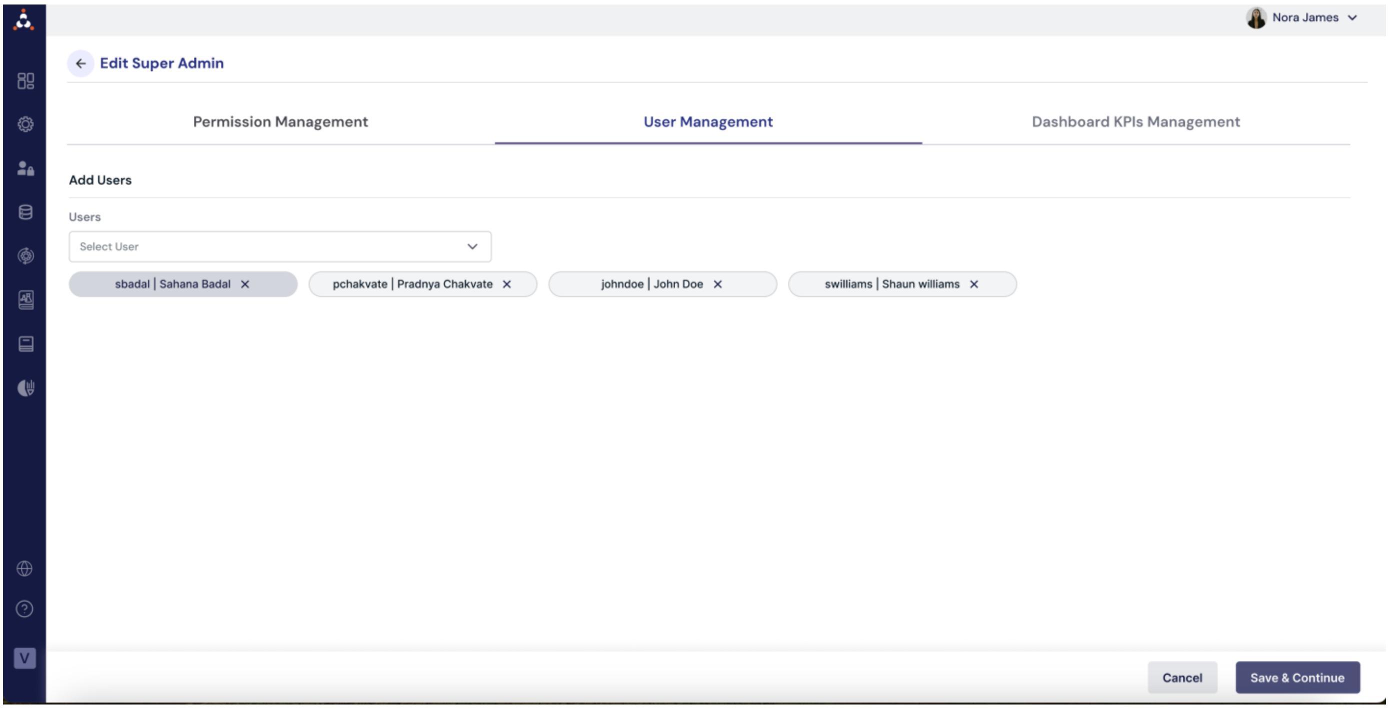
- New users can be added via a **multi-select searchable dropdown** labeled “Users”.
- The dropdown lists all **active users** and supports search by **name or ID**.
- Once selected, users are displayed as pills in the format: userID | FirstName LastName (e.g., tester01 | Tester BB)
- On Hover User can read from a tooltip which shows the entire User ID | First Name Last Name | Status
- Inactive users are visually distinguished with a darker pill background. **CR-VD-4483**

User Removal

- Each pill includes a hover-activated **“X” icon** to remove the user from the role.
- Removal is **soft-delete** until form is saved; production data remains unaffected until save action.

Actions

- **Save & Continue**: Saves current state and navigates to **Dashboard KPIs Management** tab
- **Cancel**: Discards unsaved changes
- Users can also navigate to the next tab via tab header



3.1 Dashboard KPI Management

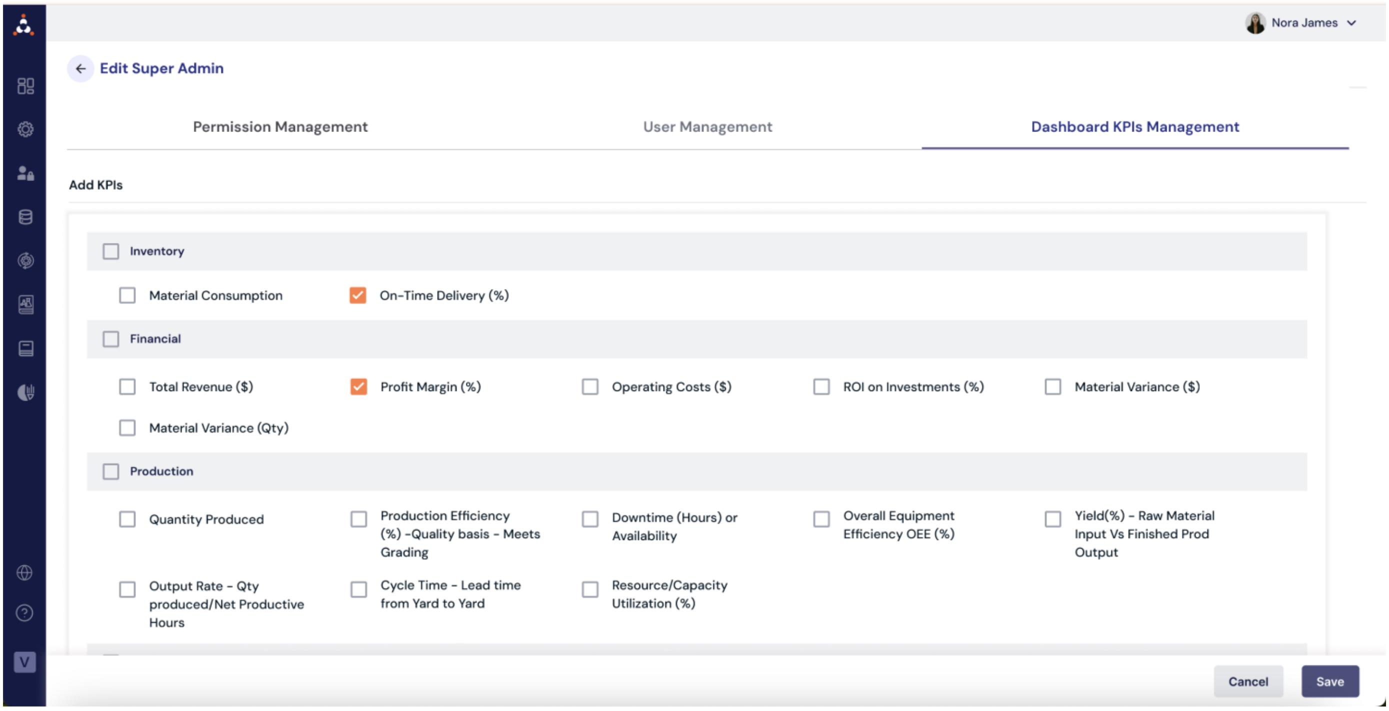
Allows mapping of **Key Performance Indicators (KPIs)** to a role, determining what users with this role can **view/edit** on their dashboards.

- Pre-assigned KPIs are **pre-selected** in the list.

- Each KPI is shown with a **checkbox** for selection/deselection.
- A **“Select All”** option is available at the **category level**.

Actions

- **Save**: Saves KPI updates and navigates to the **roles list page**
- **Cancel**: Discards changes
- Users may navigate directly to other tabs via tab headers.

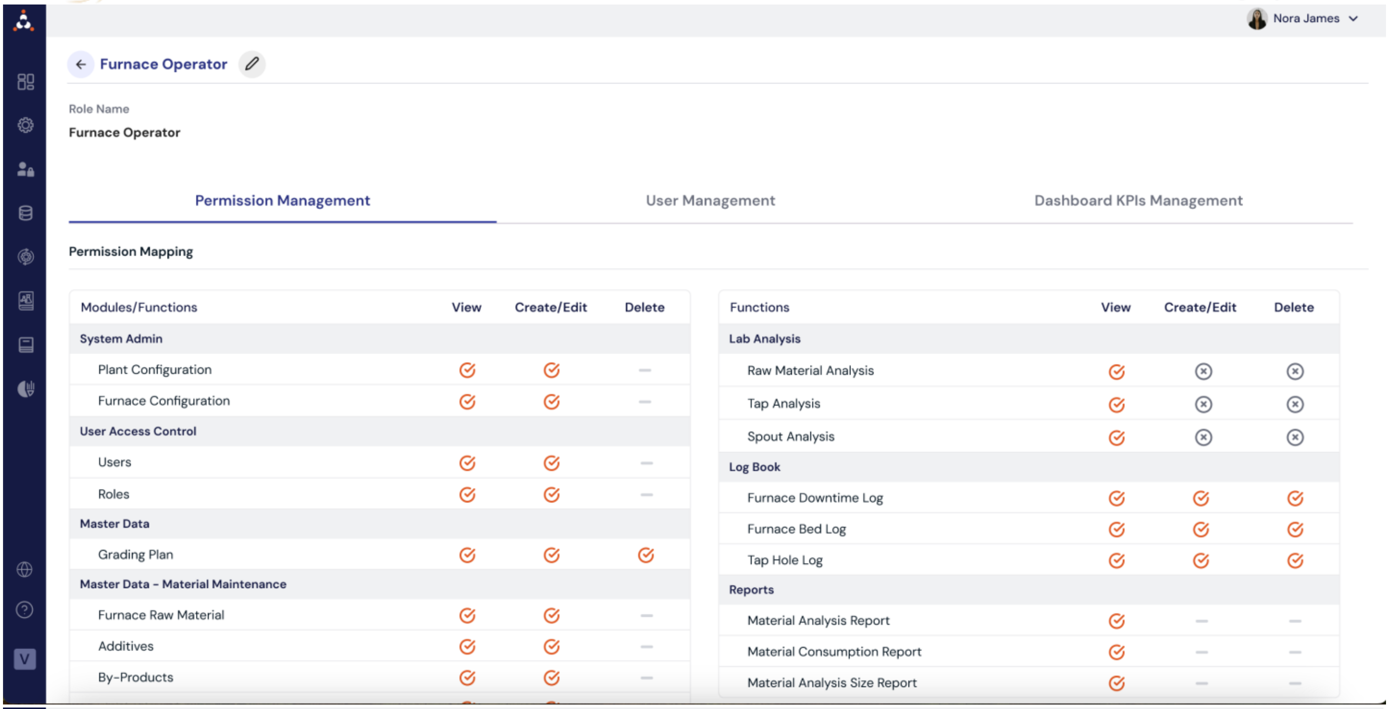


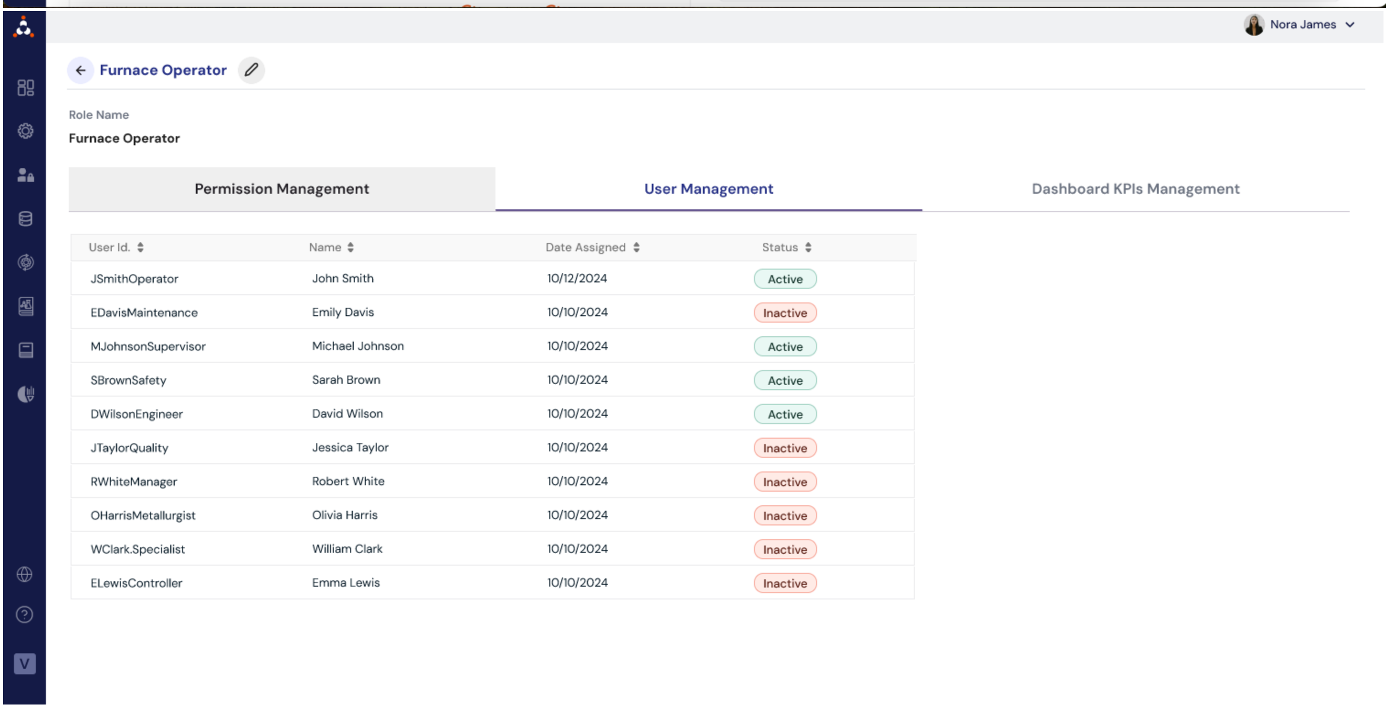
3.3. View Role

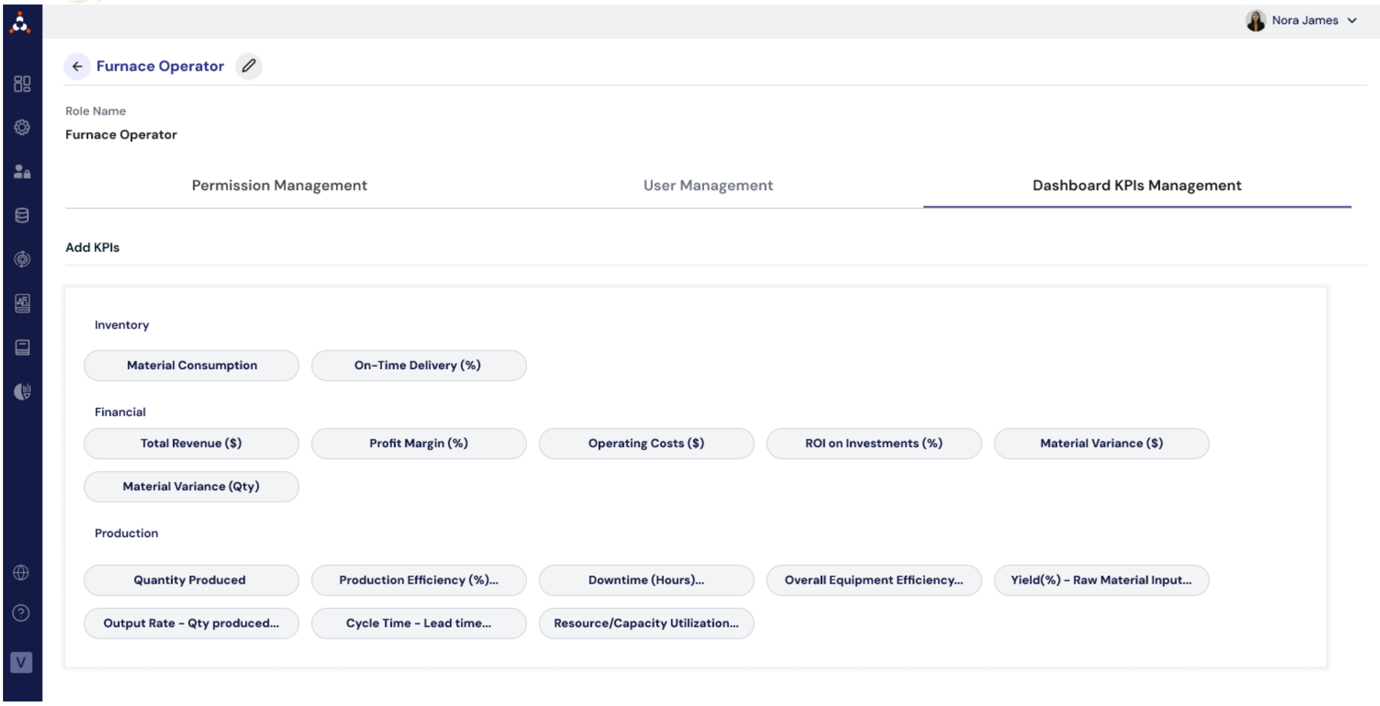
Each tab in the Role Management flow — **Permission Management**, **User Management**, and **Dashboard KPIs Management** — will support a **View Mode**, allowing users to review existing role configurations in a read-only format.

An **Edit icon** will be displayed (based on permissions) to allow transition to Edit Mode.

Header : Back Icon | “Role Name” | Edit Icon


Nora James
Furnace Operator
Role Name
Furnace Operator
Permission Management
User Management
Dashboard KPIs Management
Permission Mapping
Modules/Functions
View
Create/Edit
Delete
System Admin
Plant Configuration
Furnace Configuration
User Access Control
Users
Roles
Master Data
Grading Plan
Master Data - Material Maintenance
Furnace Raw Material
Additives
By-Products
Functions
View
Create/Edit
Delete
Lab Analysis
Raw Material Analysis
Tap Analysis
Spout Analysis
Log Book
Furnace Downtime Log
Furnace Bed Log
Tap Hole Log
Reports
Material Analysis Report
Material Consumption Report
Material Analysis Size Report


Nora James
Furnace Operator
Role Name
Furnace Operator
Permission Management
User Management
Dashboard KPIs Management
User Id.
Name
Date Assigned
Status
JSmithOperator
John Smith
10/12/2024
Active
EDavisMaintenance
Emily Davis
10/10/2024
Inactive
MJohnsonSupervisor
Michael Johnson
10/10/2024
Active
SBrownSafety
Sarah Brown
10/10/2024
Active
DWilsonEngineer
David Wilson
10/10/2024
Active
JTaylorQuality
Jessica Taylor
10/10/2024
Inactive
RWhiteManager
Robert White
10/10/2024
Inactive
OHarrisMetallurgist
Olivia Harris
10/10/2024
Inactive
WClark.Specialist
William Clark
10/10/2024
Inactive
ELewisController
Emma Lewis
10/10/2024
Inactive


Nora James
Furnace Operator
Role Name
Furnace Operator
Permission Management
User Management
Dashboard KPIs Management
Add KPIs
Inventory
Material Consumption
On-Time Delivery (%)
Financial
Total Revenue ($)
Profit Margin (%)
Operating Costs ($)
ROI on Investments (%)
Material Variance ($)
Material Variance (Qty)
Production
Quantity Produced
Production Efficiency (%)...
Downtime (Hours)...
Overall Equipment Efficiency...
Yield(%) - Raw Material Input...
Output Rate - Qty produced...
Cycle Time - Lead time...
Resource/Capacity Utilization...