PSM DASHBOARDS AND METRICS

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DEKRA SE

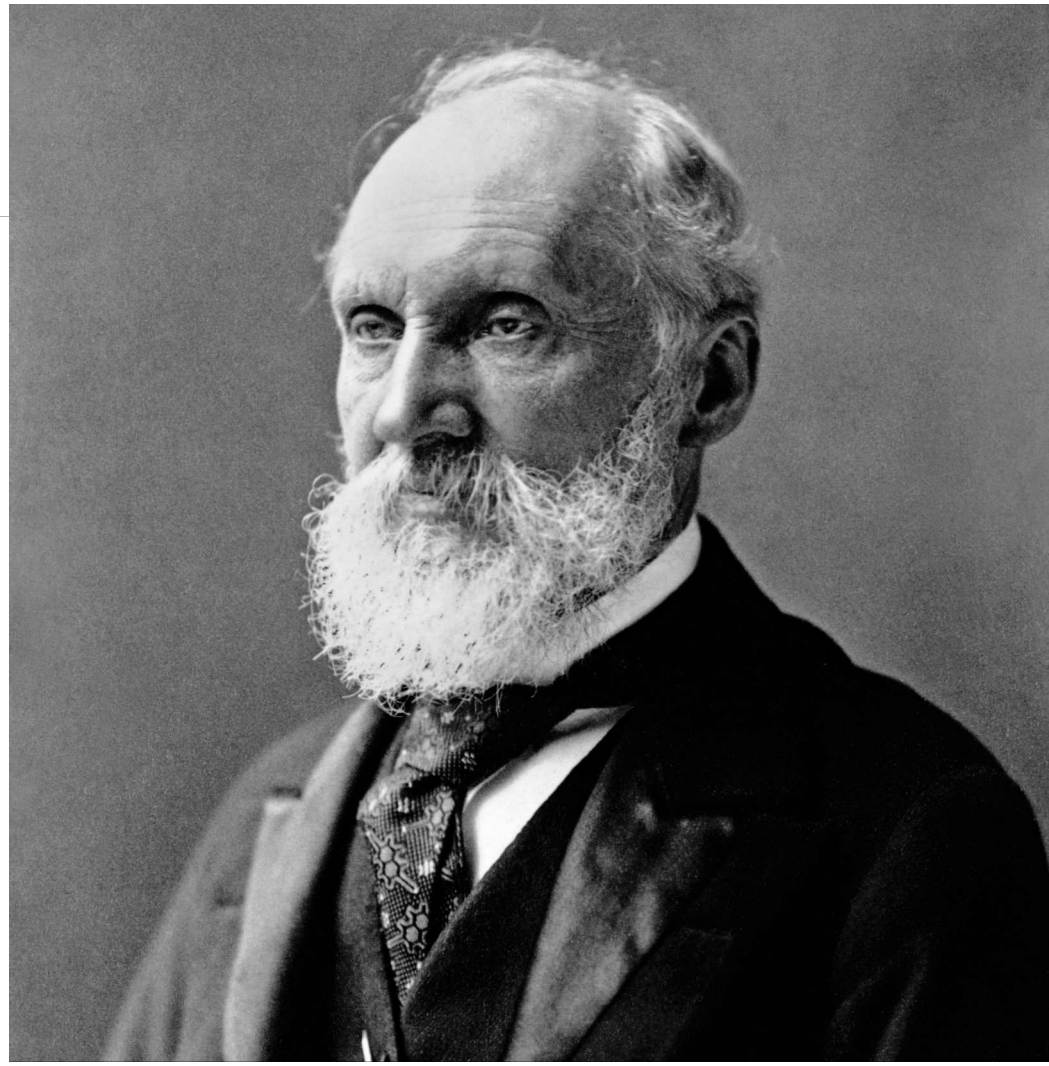
Agenda

- Why do we measure?
- The DEKRA Safety Platform
- Organizational Process Safety
- Dynamic Dashboard
- Sneak preview. Dynamic Risk Register

Why do we measure?

“When you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely, in your thoughts advanced to the State of science, whatever the matter may be.”

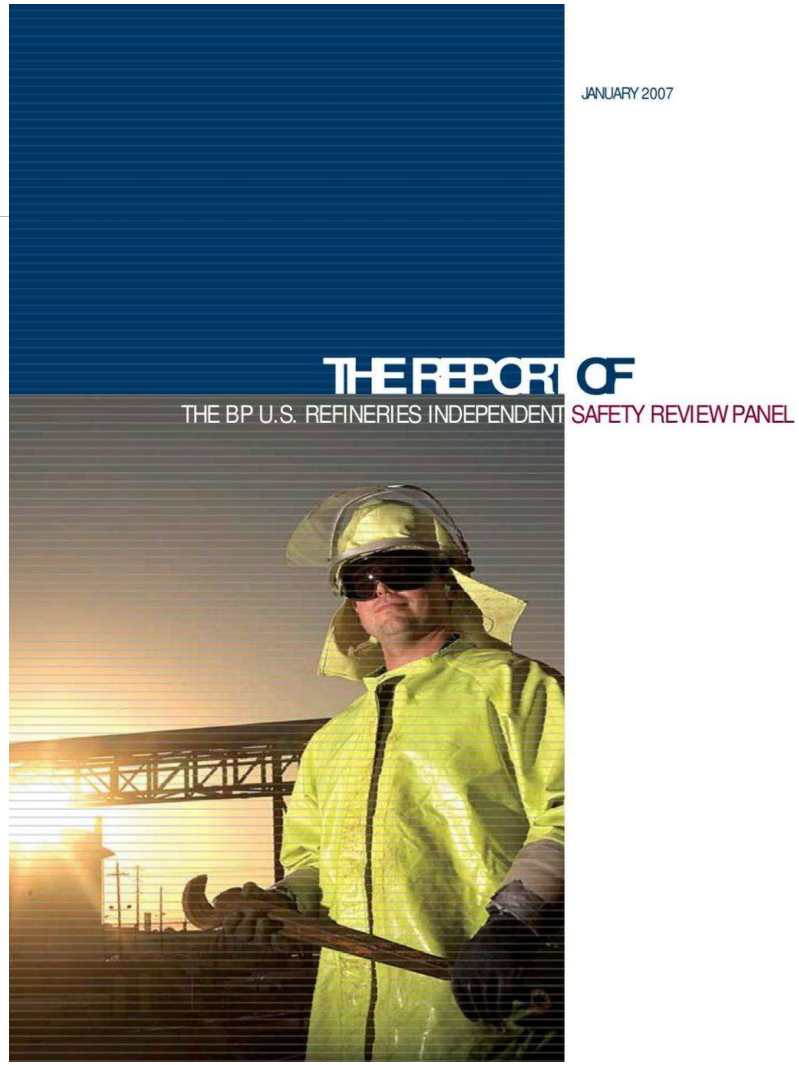
(William Thomson, 1st Baron Kelvin, Lecture to the Institution of Civil Engineers, 3 May 1883)



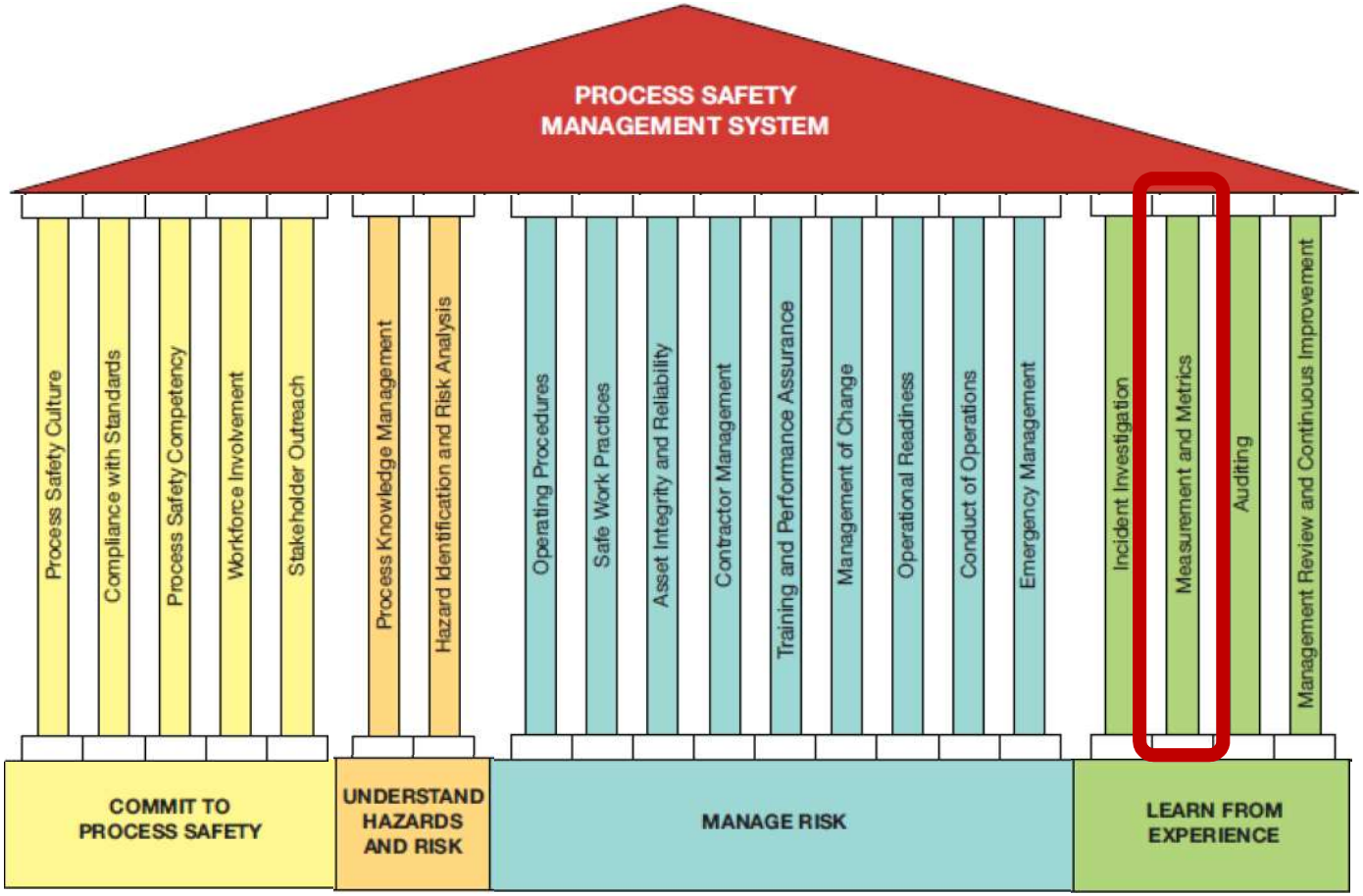
Why do we measure?

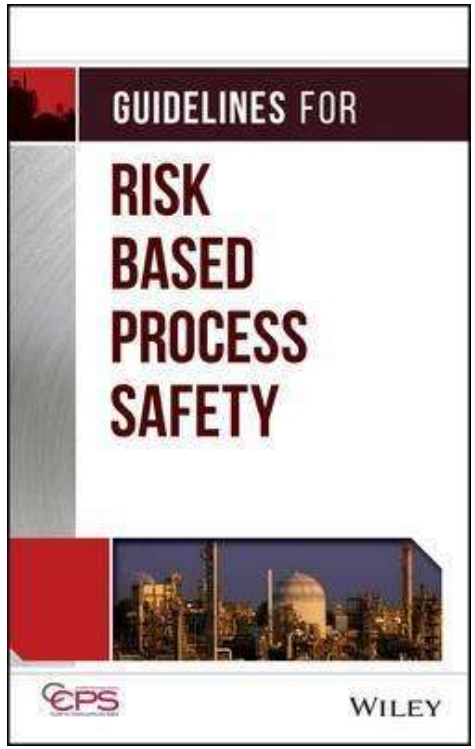
“Regular measurement and monitoring of process safety performance allows an organization to evaluate the effectiveness of steps taken to control and reduce process risk.”

Management of Hazards Associated with Location of Process Plant Buildings, RP 752, American Petroleum Institute, Washington DC, November 2003. Quoted on the Baker Panel Final Report, 2007



CCPS – Risk-Based Process Safety (RBPS)



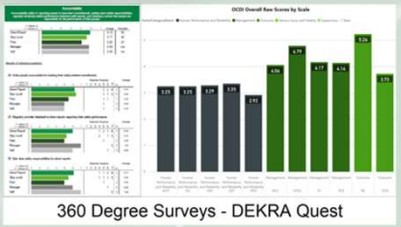


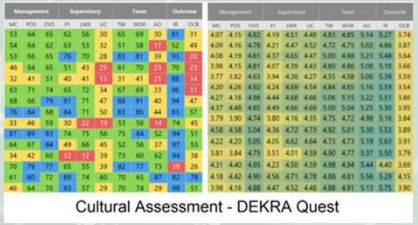
DEKRA Safety Platform™


OPS - Organizational Process Safety


Surveys - DEKRA Quest


Safety Assessments - DEKRA Quest


360 Degree Surveys - DEKRA Quest


Cultural Assessment - DEKRA Quest


Leadership Safety - DEKRA Go


DEKRA E-Learning


Construction Site Safety - DEKRA Go


Ergonomic Evaluations - DEKRA Go

Since 2018, DEKRA has stopped building “hardwired” dashboards and other static tools. Instead, we have built the DEKRA Safety Platform (DSP), as an ecosystem of applications sufficiently flexible to accommodate our clients’ needs.

Why?

Flexibility

We have not built a hardwired solution, but a series of „building blocks“ that can be used to construct what is required in every case.

Fully customizable

Any element (e.g. questionnaires, database structure, dasboards...) can be adapted to every client‘s need.

Data security

DSP is based on a well-established technology stack: Microsoft Azure. Database is Microsoft SQL. This provides state of the art data security.

Data analytics-ready

The information is collected in a well-structured manner. Therefore, building any ETL (extract, transform and load) pipeline for data analytics becomes very easy.

Organizational Process Safety

DEKRA **OPS Tool**

Manager | arturo trujillo

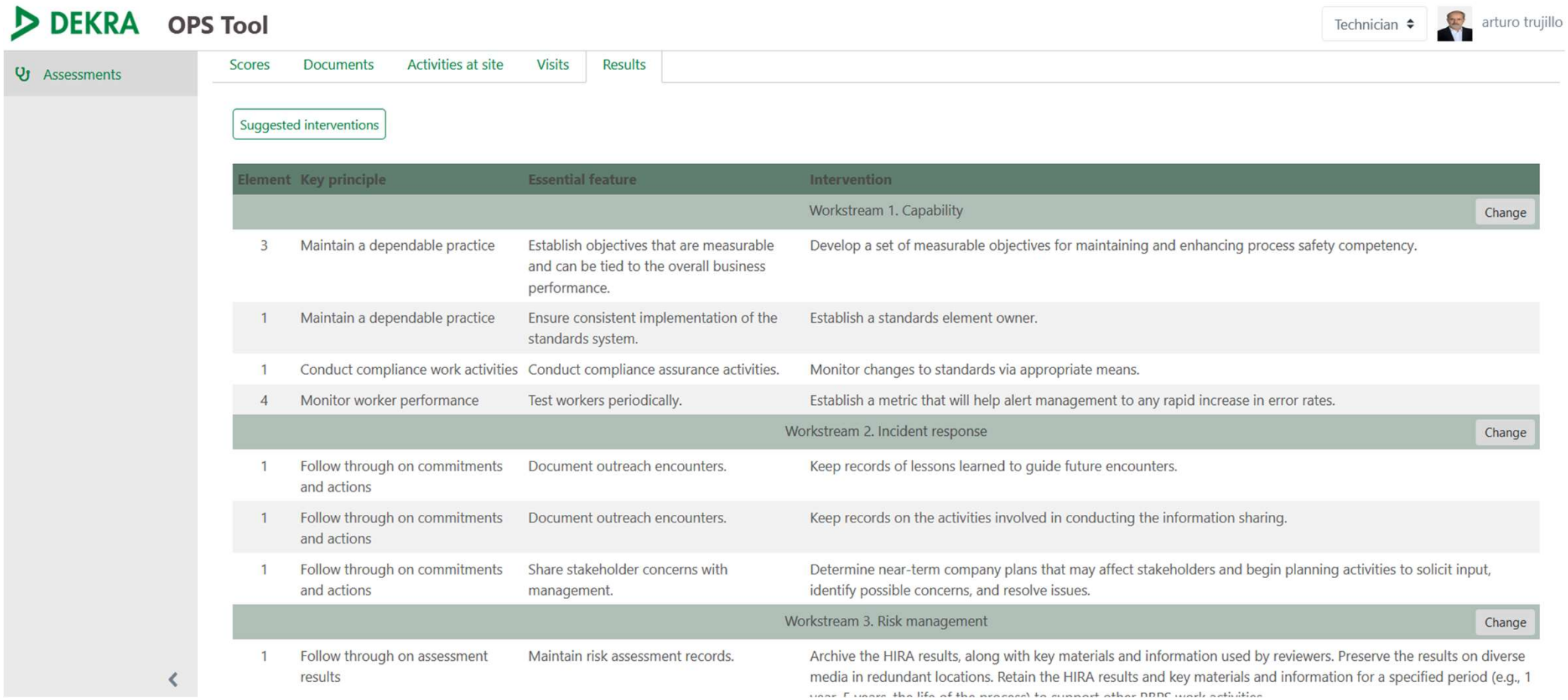
MANAGER

- Assessments
- Clients

Elements | Team | Documents | Activities at site | Visit plan

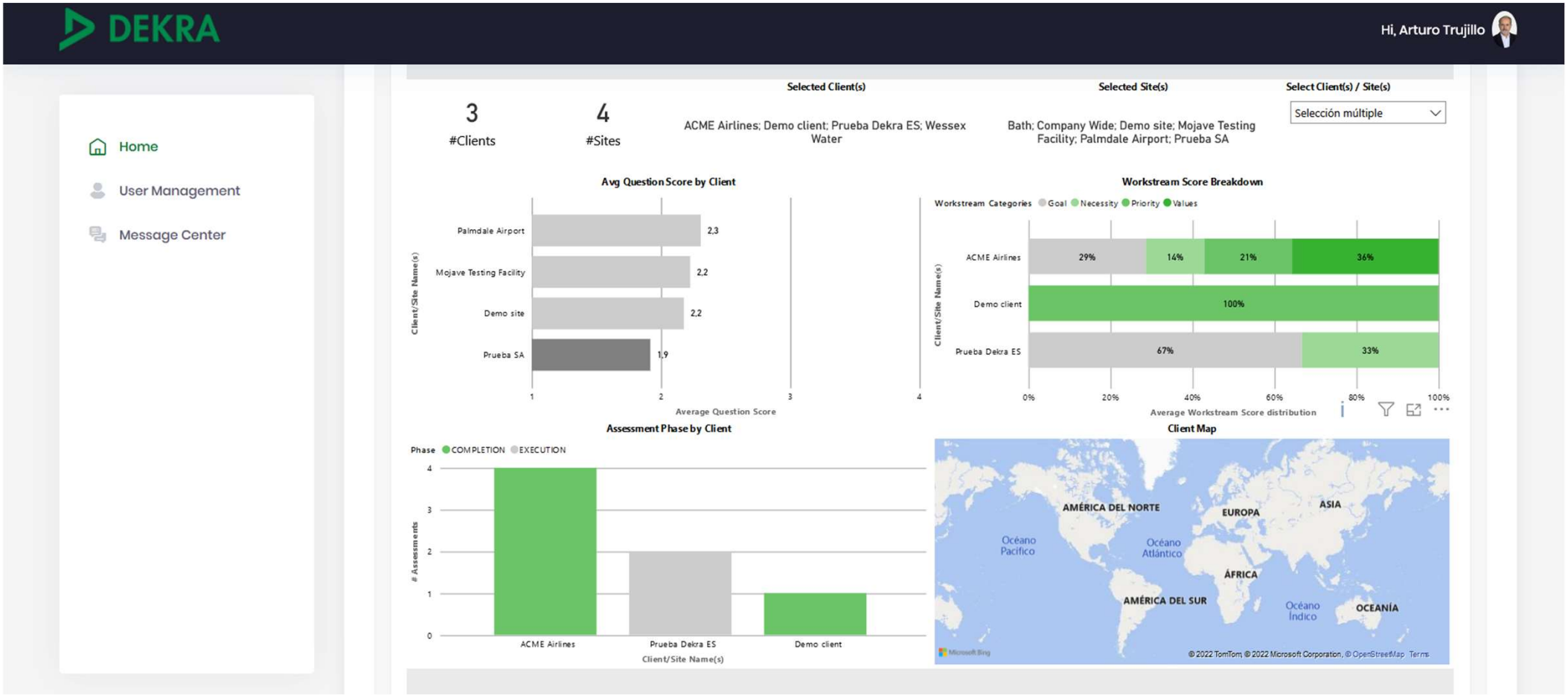
	Code	Name	Technicians	Score
		Workstream 1. Capability		3 Priority
○	1	Compliance with standards	Arturo Trujillo (arturo.trujillo@dekra.com)	4 Goal
○	2	Process knowledge management	Arturo Trujillo (arturo.trujillo@dekra.com)	2 Necessity
○	3	Process safety competency	Arturo Trujillo (arturo.trujillo@dekra.com)	3 Priority
○	4	Training and performance assurance	Arturo Trujillo (arturo.trujillo@dekra.com)	1 Burden
		Workstream 2. Incident response		2 Necessity
○	1	Stakeholder outreach	Arturo Trujillo (arturo.trujillo@dekra.com)	1 Burden
○	2	Emergency management	Arturo Trujillo (arturo.trujillo@dekra.com)	3 Priority
○	3	Incident investigation	Arturo Trujillo (arturo.trujillo@dekra.com)	2 Necessity
		Workstream 3. Risk management		3 Priority
○	1	Hazard identification and risk analysis	Arturo Trujillo (arturo.trujillo@dekra.com)	3 Priority
		Workstream 4. Asset integrity		3 Priority
○	1	Asset integrity and reliability	Arturo Trujillo (arturo.trujillo@dekra.com)	3 Priority
○	2	Management of change	Arturo Trujillo (arturo.trujillo@dekra.com)	2 Necessity
		Workstream 5. Accountability		2 Necessity
○	1	Measurement and metrics	Arturo Trujillo (arturo.trujillo@dekra.com)	3 Priority
○	2	Auditing	Arturo Trujillo (arturo.trujillo@dekra.com)	1 Burden
○	3	Management review and continuous improvement	Arturo Trujillo (arturo.trujillo@dekra.com)	3 Priority

Organizational Process Safety

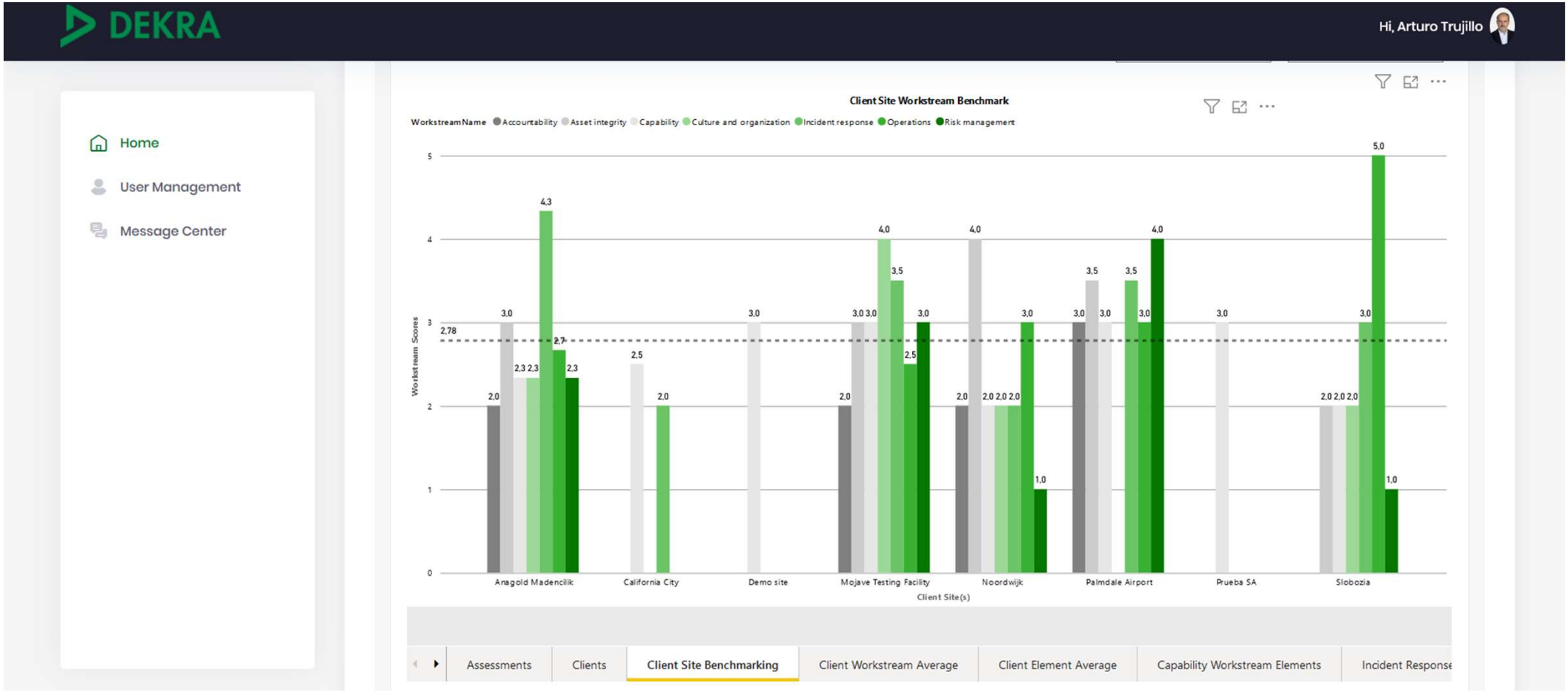


Element	Key principle	Essential feature	Intervention
			Workstream 1. Capability Change
3	Maintain a dependable practice	Establish objectives that are measurable and can be tied to the overall business performance.	Develop a set of measurable objectives for maintaining and enhancing process safety competency.
1	Maintain a dependable practice	Ensure consistent implementation of the standards system.	Establish a standards element owner.
1	Conduct compliance work activities	Conduct compliance assurance activities.	Monitor changes to standards via appropriate means.
4	Monitor worker performance	Test workers periodically.	Establish a metric that will help alert management to any rapid increase in error rates.
			Workstream 2. Incident response Change
1	Follow through on commitments and actions	Document outreach encounters.	Keep records of lessons learned to guide future encounters.
1	Follow through on commitments and actions	Document outreach encounters.	Keep records on the activities involved in conducting the information sharing.
1	Follow through on commitments and actions	Share stakeholder concerns with management.	Determine near-term company plans that may affect stakeholders and begin planning activities to solicit input, identify possible concerns, and resolve issues.
			Workstream 3. Risk management Change
1	Follow through on assessment results	Maintain risk assessment records.	Archive the HIRA results, along with key materials and information used by reviewers. Preserve the results on diverse media in redundant locations. Retain the HIRA results and key materials and information for a specified period (e.g., 1

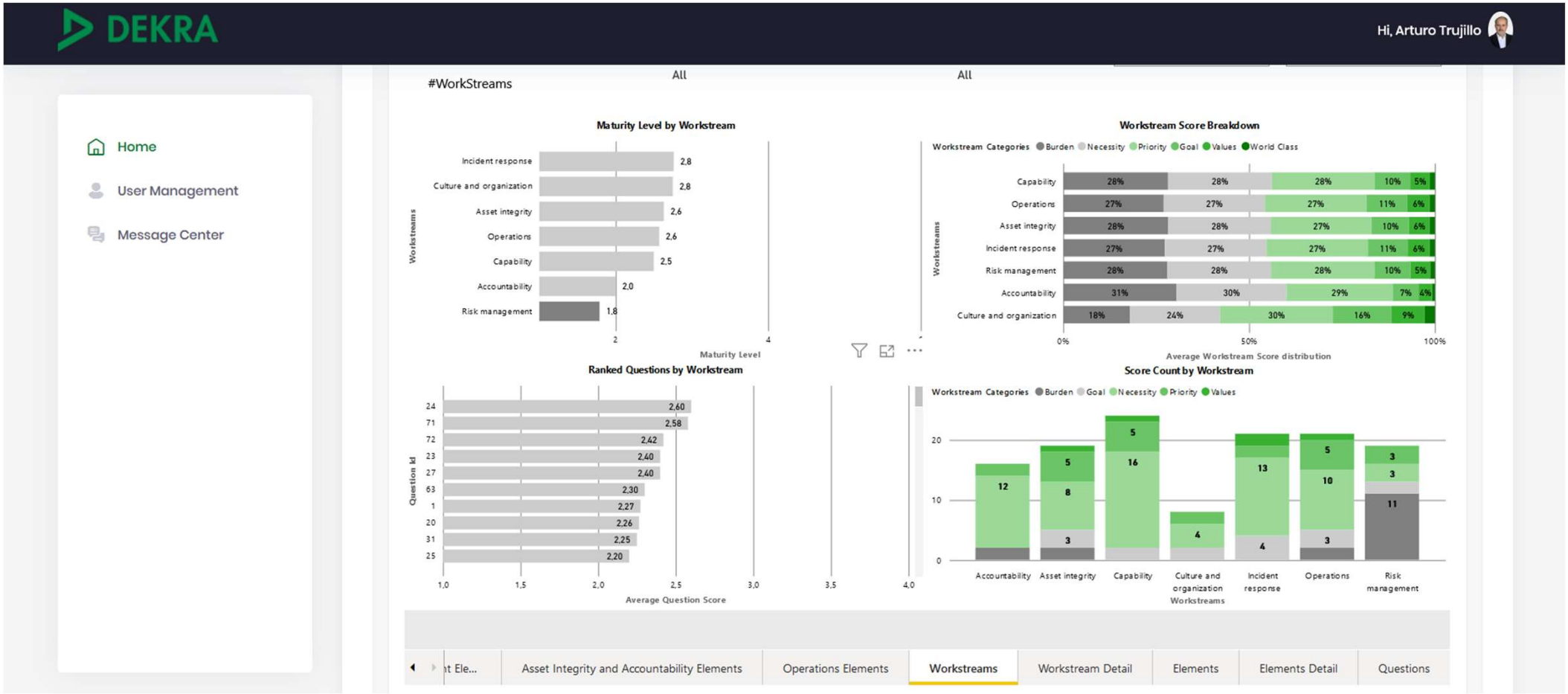
Dynamic dashboard



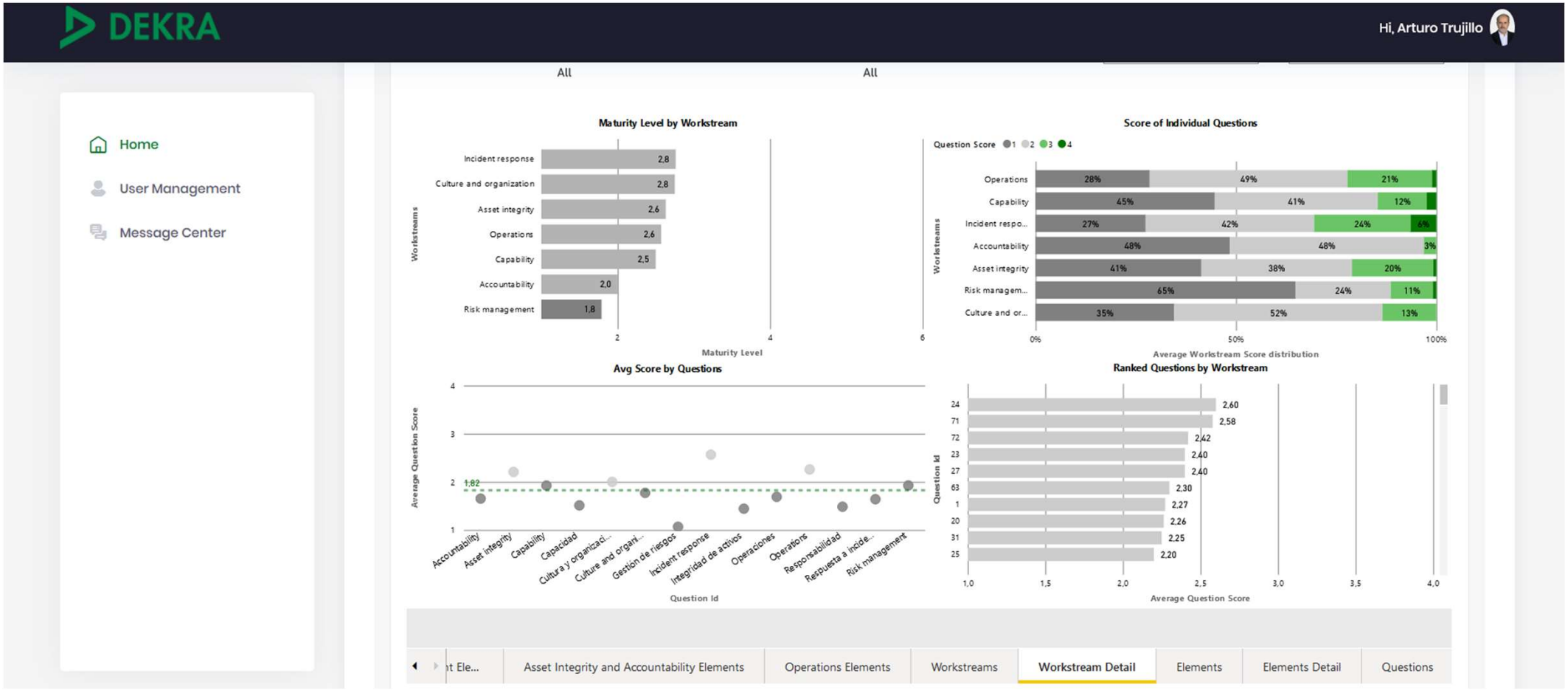
Dynamic dashboard



Dynamic dashboard



Dynamic dashboard



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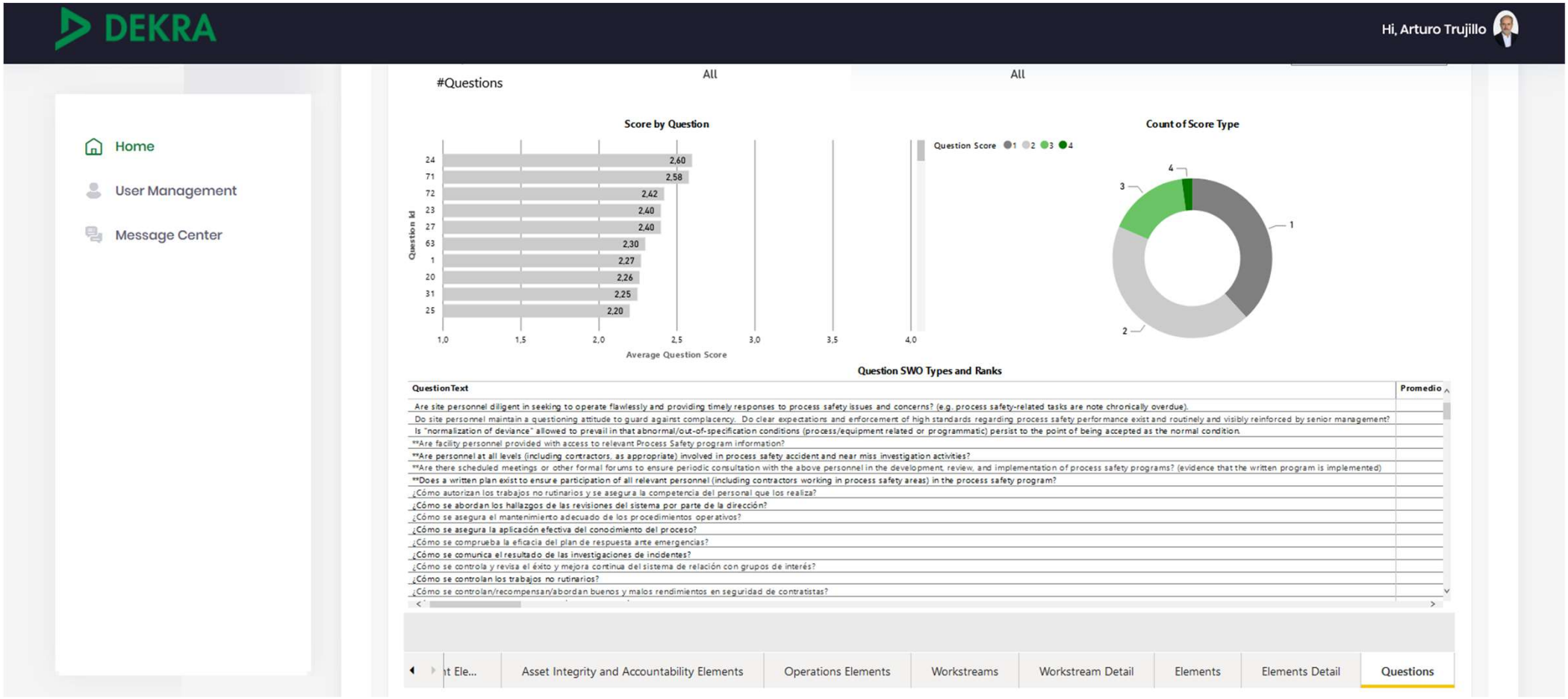


Dynamic Risk Register

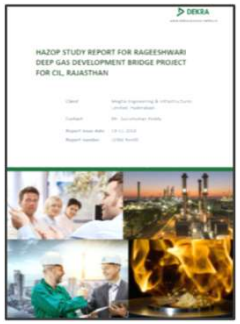
Organizations and their personnel spend immense resources on identifying hazards and analyzing risks of their assets and processes. As a result of those efforts, the resulting PHAs contain very valuable information.

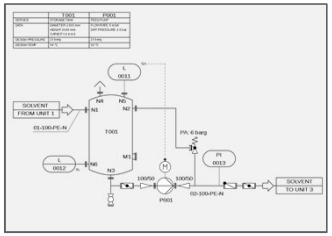
Unfortunately, this information is usually locked in huge volumes of data, rarely revisited once the PHA is completed.

Dynamic Risk Register has been created as a tool to provide insights into PHA data, with an extremely pragmatic approach as its goal.

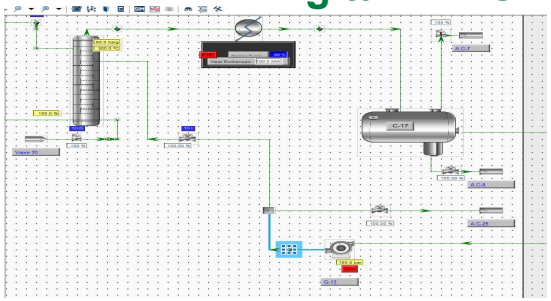
Dynamic Risk Register

Conventional PHAs

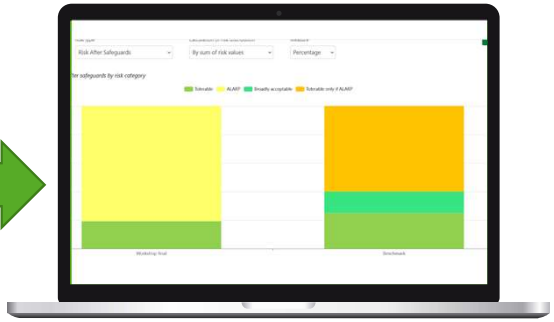




Digital PHAs



Dynamic Risk Register



Dynamic Risk Register

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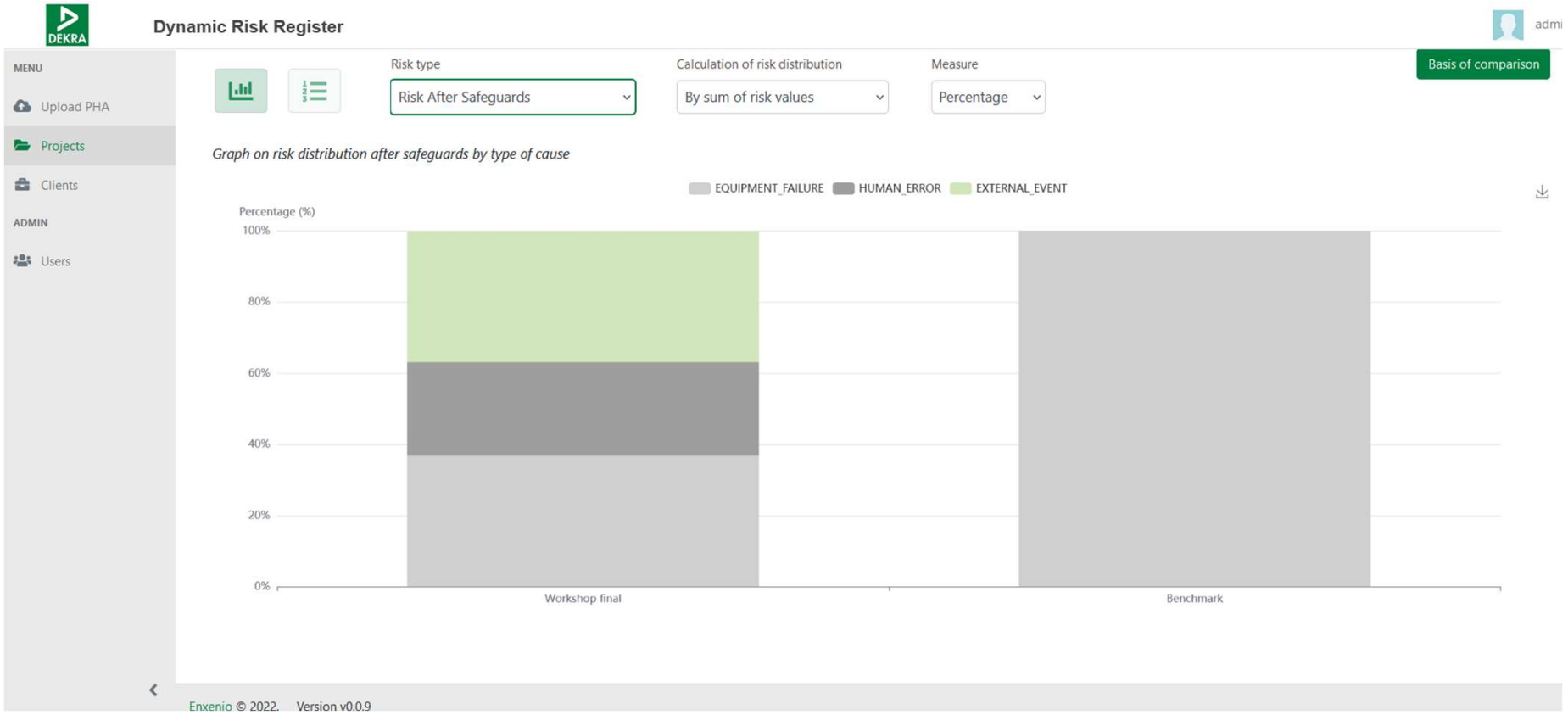

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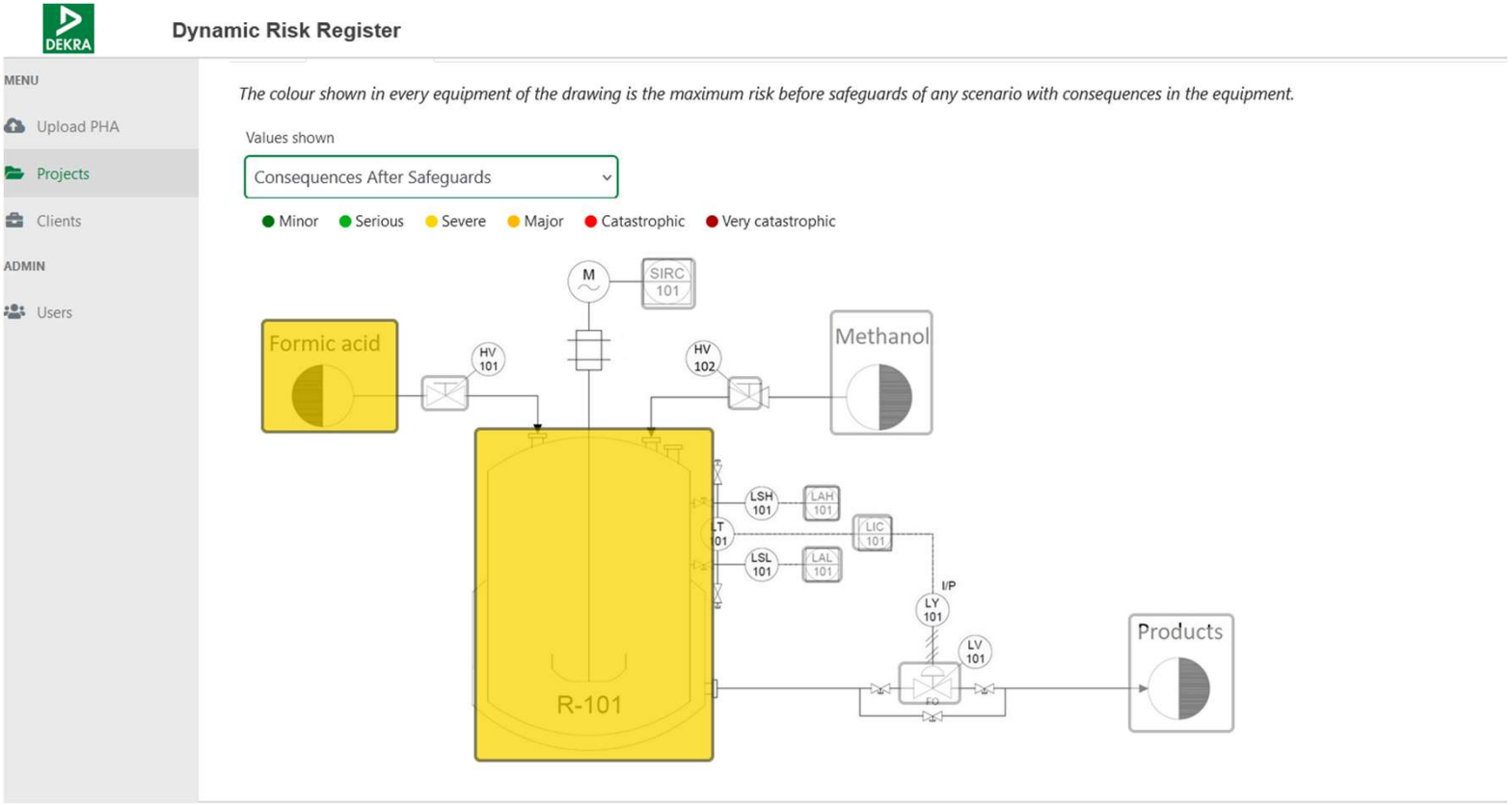

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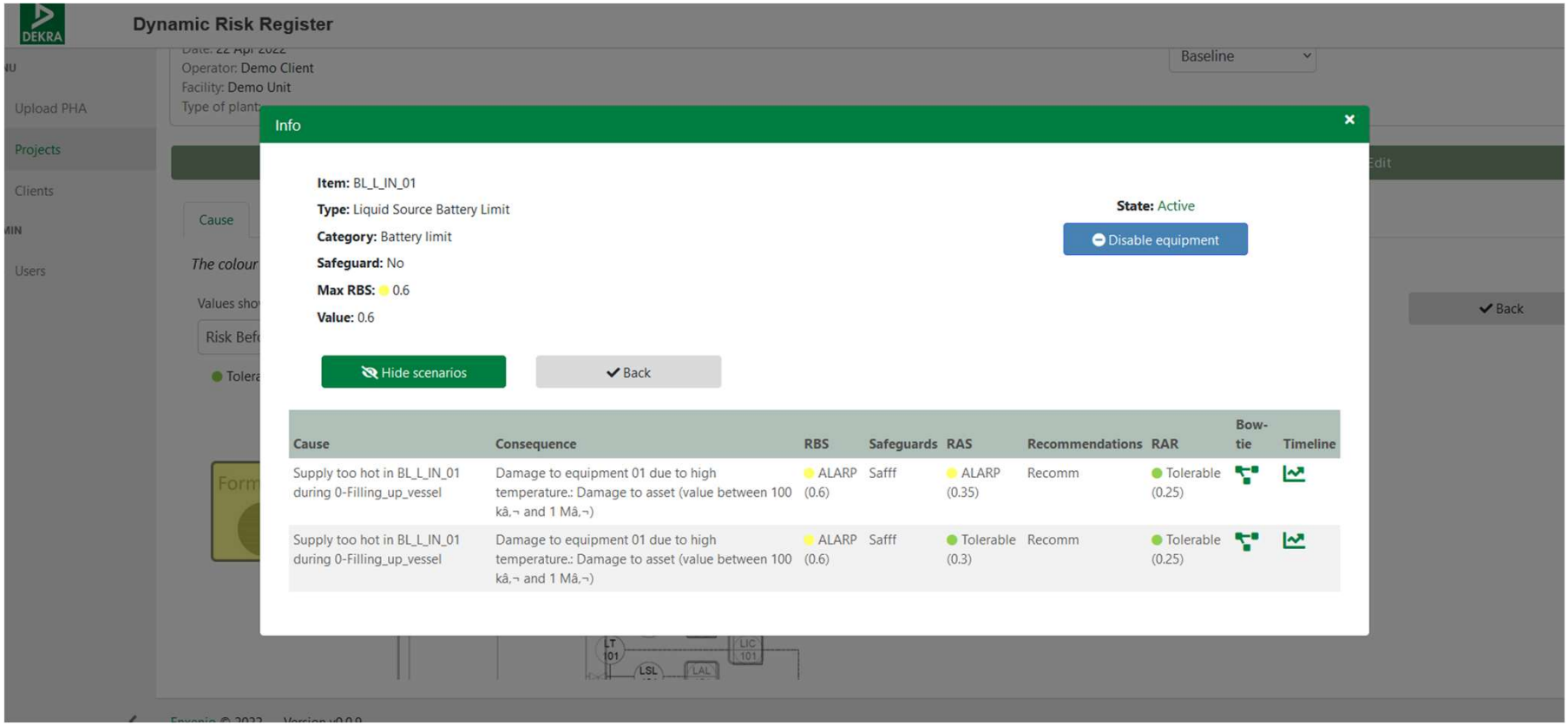

Thanks for taking care of safety!