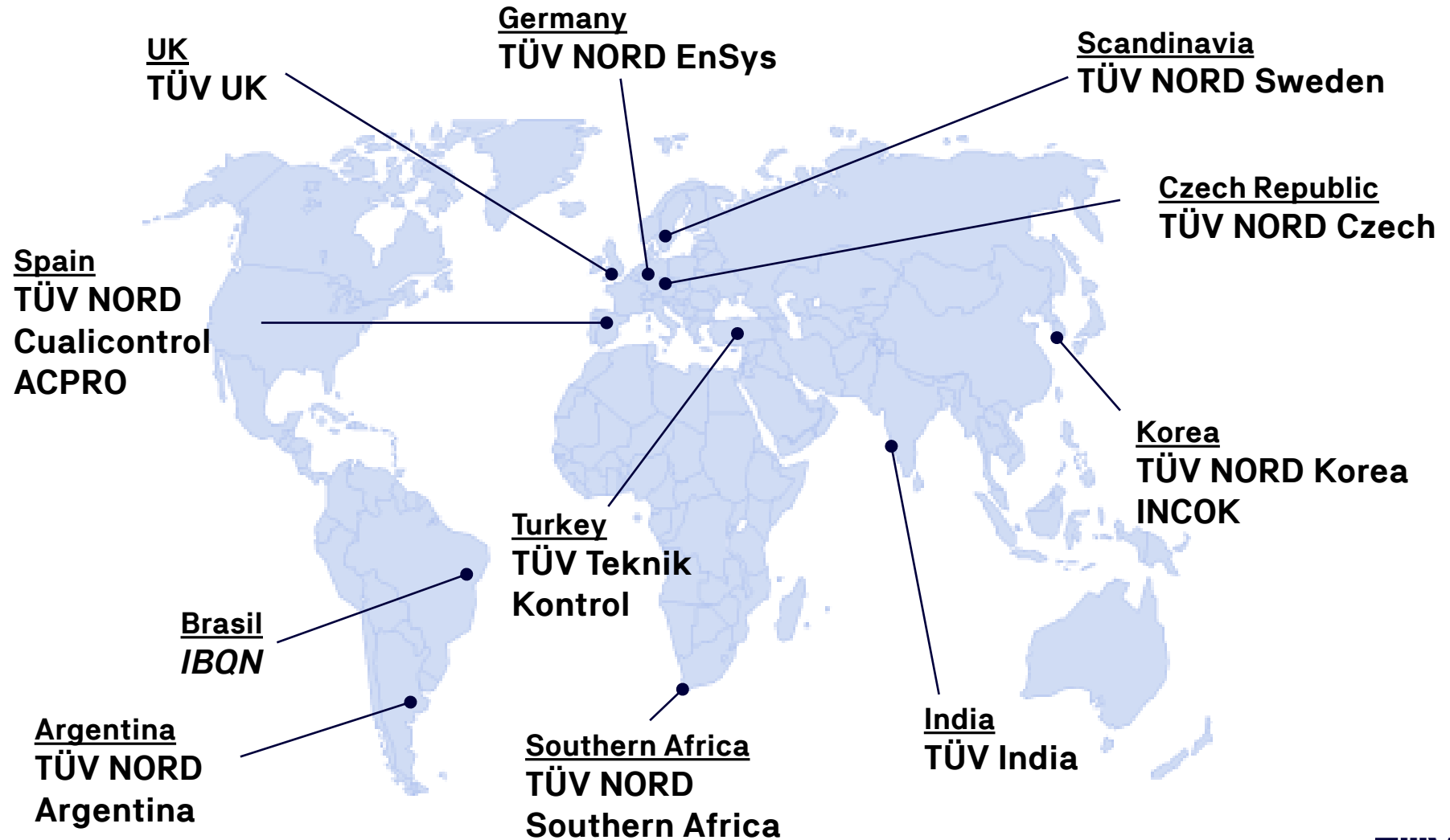
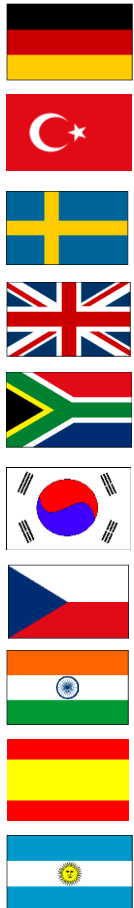


# TÜV NORD Czech: Introduction and Implementation of nuclear program

Jan Weinfurt

# About us

We are 1 of 10 TÜV NORD GROUP subsidiaries with the own Nuclear department (OBS)



# About us

## ▪ TÜV NORD GROUP

- ✓ Worldwide some 500 nuclear experts
- ✓ Technical experience of more than 300 operational years

## ▪ TÜV NORD Czech – Accreditation for complex portfolio of services

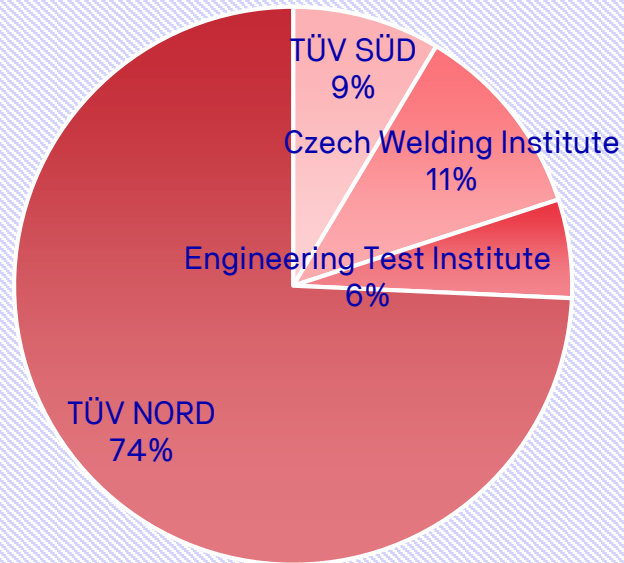
- ✓ EN ISO/IEC 17020 Inspection body
- ✓ EN ISO/IEC 17024 Certification body for personnel certification
- ✓ EN ISO/IEC 17065 Certification body for products certification
- ✓ NB 1221 (PED, TPED, SPV)
- ✓ Authorized person AO 248

# About us

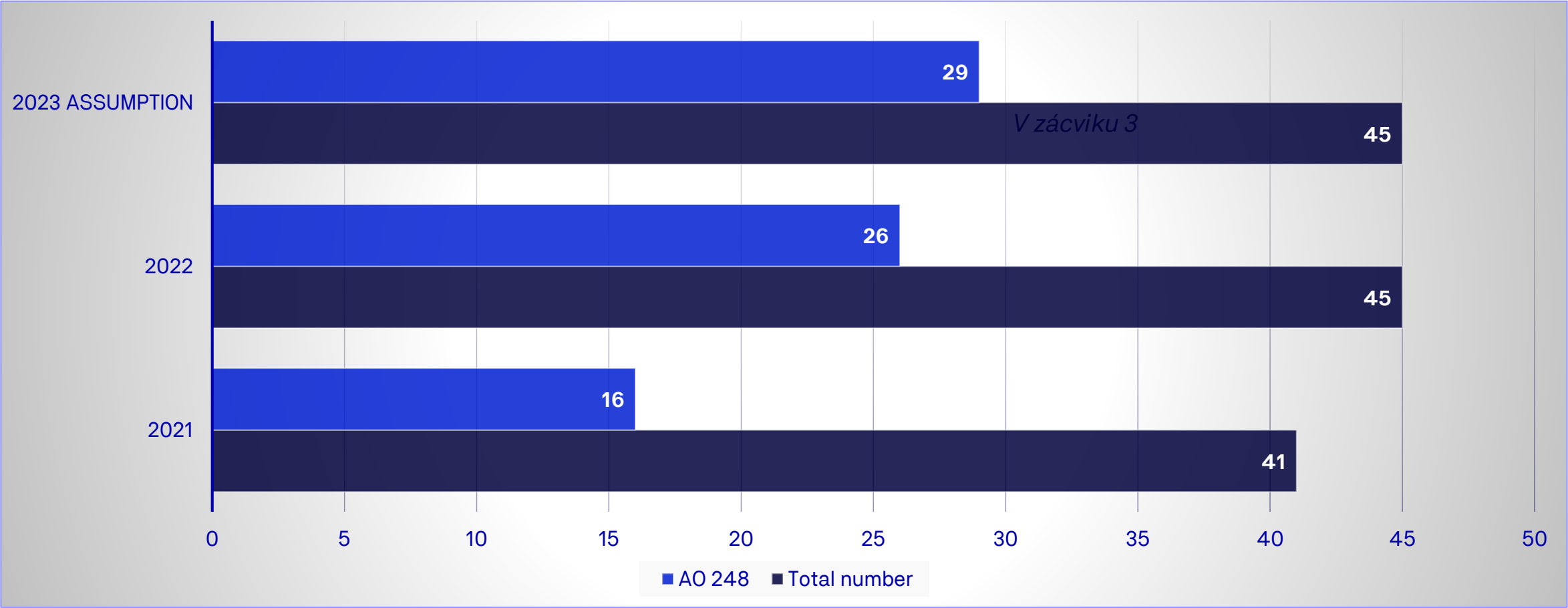
**AO 248 (services for NPP's operators and supply chain) - TÜV NORD Czech is....**

- the most active authorized person (4 in total) in the Czech Republic since 2005

## Approx. numbers of qualified inspectors of authorized persons in the Czech Republic



# About us – qualified inspectors



# About us

## AO 248 – TÜV NORD Czech, s.r.o. is...

- coordinator of other authorized persons (a total of 4 including TN) for the area of conformity assessment in the area of so-called selected equipment in the Czech Republic
- **New! (13<sup>th</sup> Feb.) Extension of Authorisation for: „*metal products of the construction part of the nuclear facility, which contain the selected equipment and are part of the reinforced concrete construction of the nuclear reactor building, the contour of the assembly hatch and the steel lining defining the hermetic space and parts of these selected devices ensuring the tightness and strength of the hermetic space and conformity assessment procedures*“**
- **Nr. 1 in ASME**
  - **the highest number of nuclear ASME inspectors (ANI): 3**  
total in the Czech Republic: (Mojmír Srnec, David Duba, Miloslav Choc) + further 3 very experienced ASME inspectors in qualification process to become nuclear ASME inspectors (Jan Haškovec, Jiří Naiman, Oldřich Bukal)
  - **the only nuclear ASME supervisor (ANIS) in the Czech Republic: David Duba**



# Services for nuclear energy – for NPP's operators and supply chain

- Comprehensive range of compliance assessment of selected equipment from design review to material assessment with technical requirements
- Welding procedure tests, qualification of permanent joining personnel, quality requirements for welding in acc. with EN ISO 3834
- NDT and personnel attestation
- Update and processing of inspection procedures, methodologies and instructions
- Audits (NDT, ISO 3834...)
- Independent third-party services
- Verification of the quality of metallurgical materials and semi-finished products / accredited laboratory in Brno
- Special equipment controls
- Review of technical documents for the production, delivery and operation of the selected equipment
- Evaluation of the supply chain (as part of the tender process as well as during cooperation = customer-technical inspections)
- Unification of the approach to the fulfillment of legislative requirements in the field of nuclear energy
- Training
- **Services to meet ASME Boiler and Pressure Vessel Code requirements**

# Purpose of our services

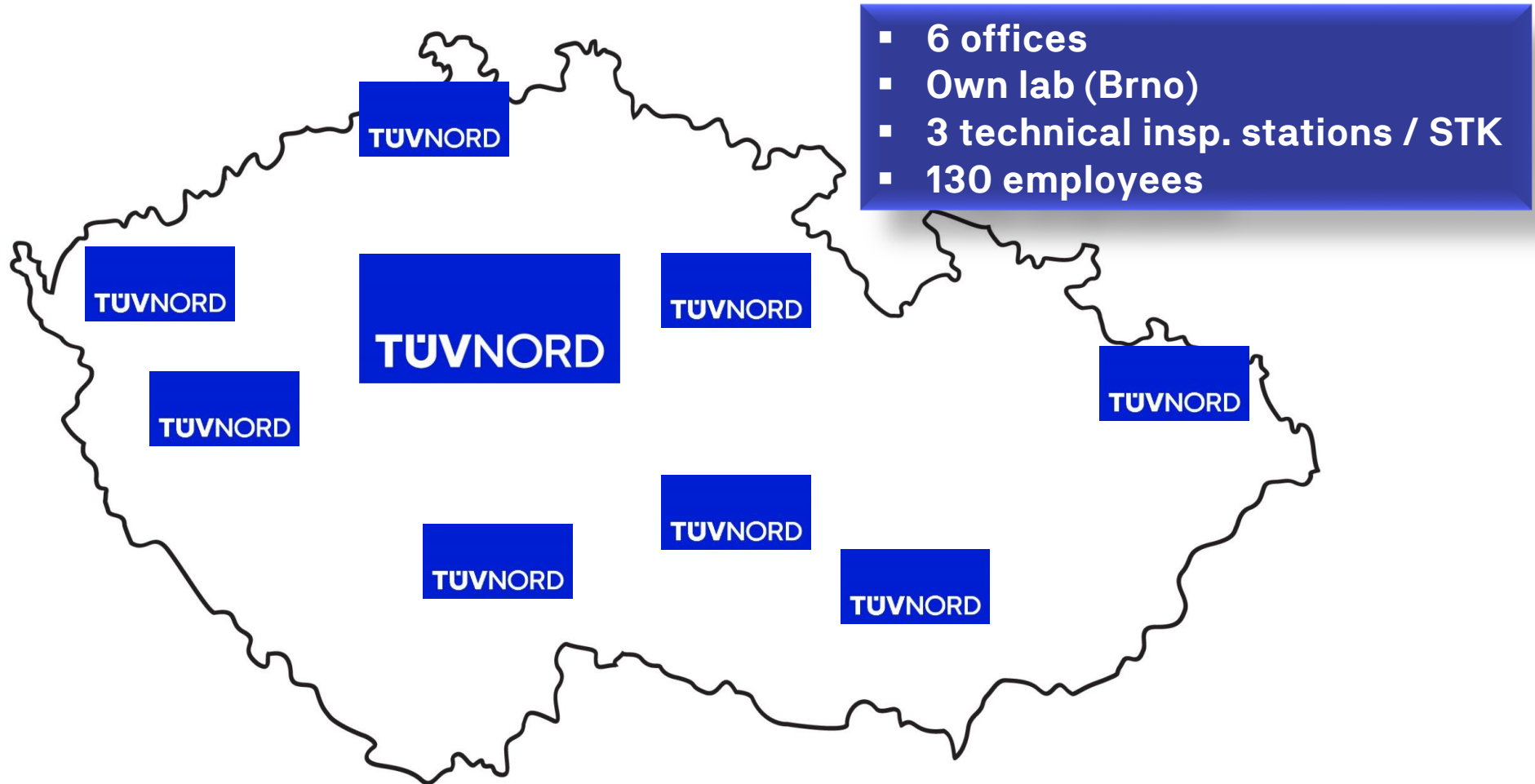
- **Safety and quality assurance**
- Availability and flexibility
- High expertise
- Wide range of qualifications (pressure, electrical, lifting equipment...)
- Substitutability
- Background of a multinational company:
  - EUR 10 million insurance
  - international representation
  - Transfer of experience also from NPPs outside the Czech Republic

## **Nuclear energy is top business – safety first!**

*Lessons learnt: we had to remove companies from our supply chain as they did not meet our quality assurance requirements*



# Availability – our offices



# Availability – new offices at ČEZ locations ...since 2022

**For Temelín NPP – Pavel Fleischmann**

Gen. Svobody 606

399 01 Milevsko, JEDNOTA building, office nr. 11



**For Dukovany NPP – Pavel Horáček**

LIKUS II

Office nr. 105, EDU




# Availability – own accredited lab: LaZ Brno

- Testing metallurgical materials – as needed: shift operation, weekends, public holidays / 24/7
- 2022 – extensive modernization of laboratories:
  - The sample preparation room is equipped with a second lathe and a new saw for cutting larger samples Ø360 mm; 360 x 500 mm
  - Spark discharge spectrometer – accredited tests for steel, Al and Cu alloys (measurement of all elements including C, S and N)
  - Tearing machine with video extensometer for tests at normal and high temperatures



# ASME AIA –accreditation scope TÜV NORD Systems

The American Society of Mechanical Engineers	<b>AIA</b>	<b>CERTIFICATE OF ACCREDITATION</b>
	This is to accredit the named organization as having had the adequacy of their program verified for the scope shown below in accordance with the applicable rules of The American Society of Mechanical Engineers (ASME) Standard for Qualifications for Authorized Inspection. The accreditation granted by this certificate is subject to the provisions of the agreement set forth in the application.	
	COMPANY:	
	TÜV NORD Systems GmbH & Co. KG Grosse Bahnstrasse 31 Hamburg 22525 Germany	
	SCOPE:	
	Authorized Inspection Agency for performance of inspection activities controlled from the above location to cover Section I; Section III, Divisions 1, 3 and 5; Section IV; Section VIII, Divisions 1, 2 and 3; Section X and Section XII of the ASME Boiler and Pressure Vessel Code in accordance with QAI-1, Parts 1 and 5.	
AUTHORIZED: August 20, 2021		
EXPIRES: August 20, 2024		
CERTIFICATE NUMBER: AIA-49		
 Board Chair, Conformity Assessment		
 Managing Director, Conformity Assessment		
		

AIA shall hold a valid certificate of accreditation according to ASME QAI-1

Authorized Inspection Agency for performance of inspection activities controlled from the above location to cover Sections I; III Divisions 1, 3 and 5; IV; VIII Divisions 1, 2 and 3; X and XII of the ASME Boiler and Pressure Vessel Code in accordance with QAI-1, Parts 1, 3 and 5

Nr. of qualified inspectors TNS	Worldwide	Czech Republic
AI	85	6
AIS	21	4
ANI	15	3 Plan to achieve 6 ANIs in 2023
ANIS	2	1



# ASME BPV covers wide range of activities

ASME issues the following types of nuclear certificates (N – type), which authorize the following range of activities:

**N** – Vessels, pumps, valves, piping systems, storage tanks, core support structures, concrete containments, and transport packaging

**NA** – Field installation and shop assembly of all items

**NPT** – Parts, appurtenances, welded tubular products, and piping subassemblies

**NS** – Supports

**NV** – Pressure relief valves

**N3** – Transportation containments and storage containments

**OWN** – Nuclear power plant owner

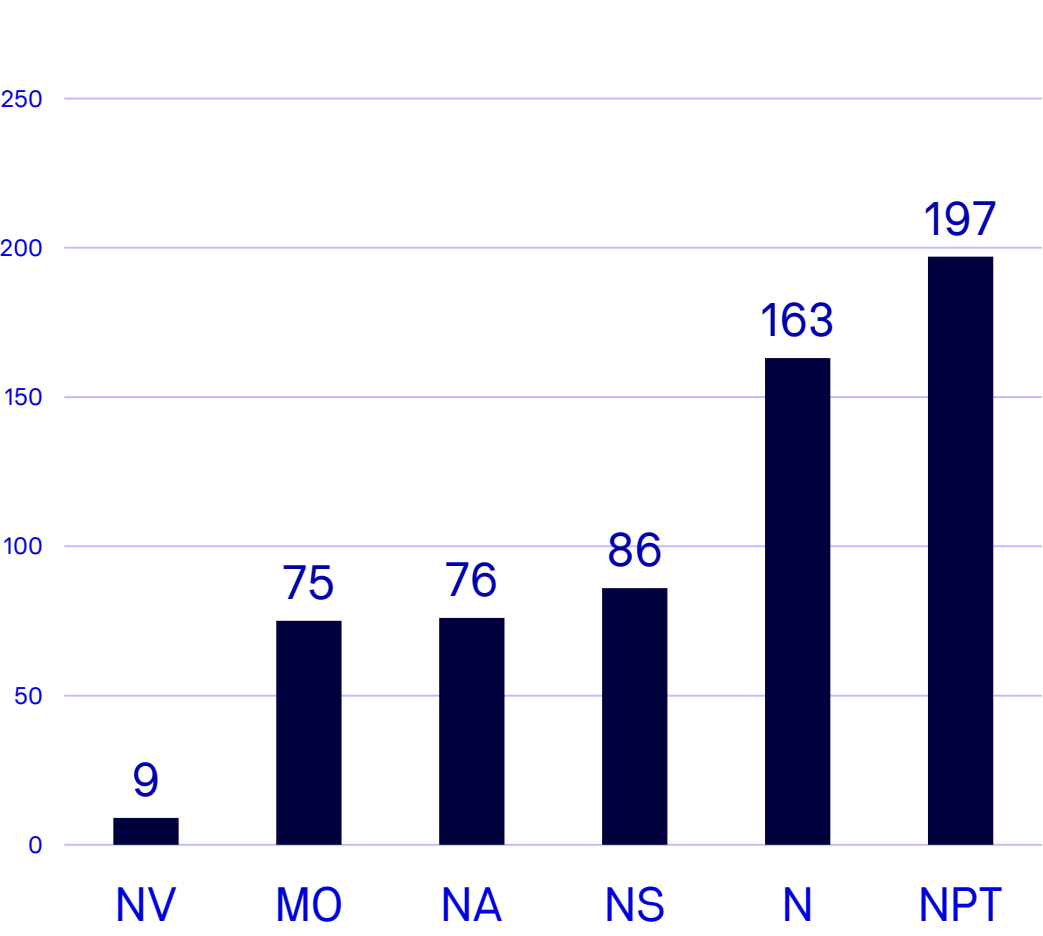
**QCS** – Quality System Certificate holder – manufacturing / furnishing of material (base or welding)

Class 1, 2 3

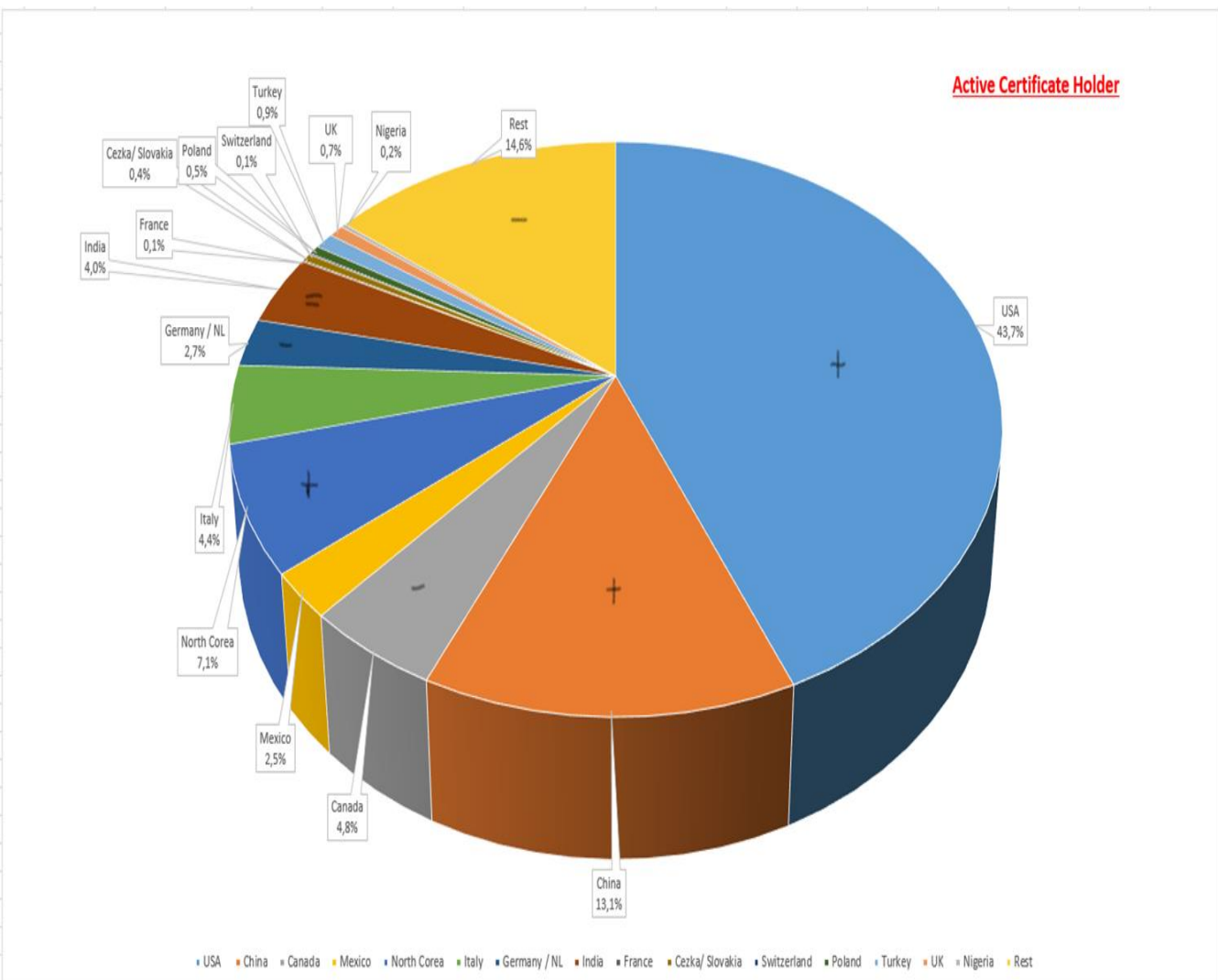


# ASME AIA – Introduction

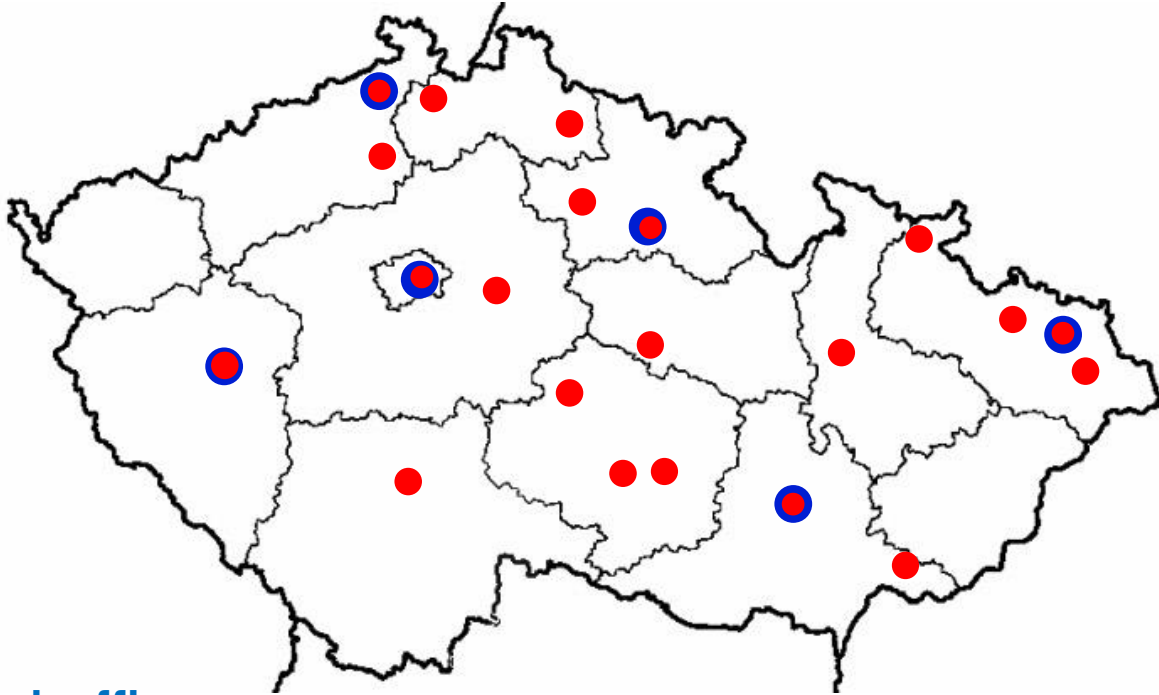
Designators Issued – Nuclear, 2022 statistics



Designators Issued – Non - Nuclear, 2022 statistics



# ASME BPV – Certificates holders



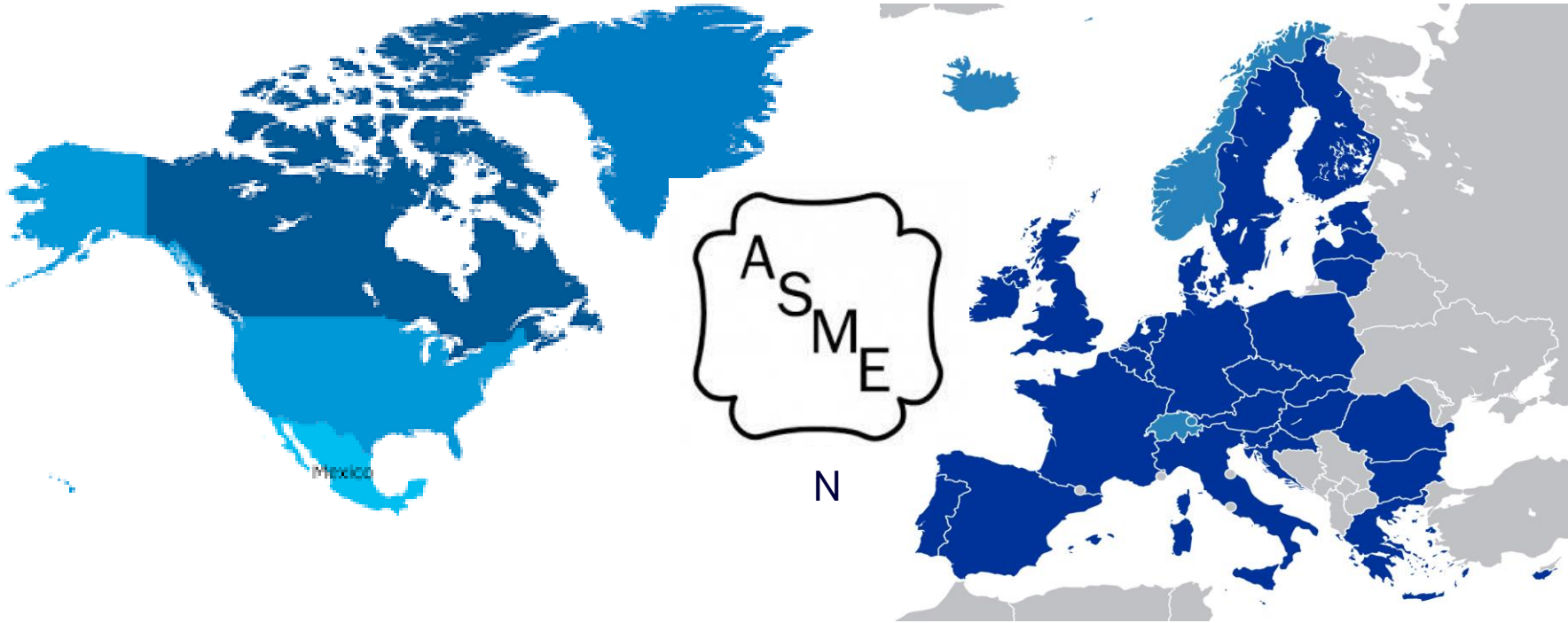
## TÜV NORD Czech offices:

- Praha
- Brno
- Ostrava
- H. Králové
- Plzeň
- Děčín

## Certificate holders (non-nuclear) serviced by TÜV NORD in Czech Republic:

- Praha
- Brno
- Ostrava
- H. Králové
- Plzeň
- Děčín
- Trutnov
- Chlumec/Cidlinou
- Frýdek Místek
- Zlaté Hory
- Pacov
- Blatnice
- Moravské Budějovice
- Litoměřice
- Blatná
- Senice
- Benešov/Ploučnicí
- Třebíč

# ASME AIA - Worldwide experience



Worldwide experience  
of TÜV NORD with  
application of **ASME BPV  
Section III - Nuclear**

- Germany
- Switzerland
- Austria
- Czech Republic
- Brazil
- Italy
- South Africa

**Cost effective application of ASME Code through longtime experience**



# ASME AIA – Technical support of TÜV NORD

## We are partner for:

- Certificate holders
- Laboratories (mechanical, chemical, calibration, ...)
- Material manufacturers (either base or welding)
- Service providers (NDE, HT, PWHT, Auditing, ...)
- Regulatory authorities
- License holders

...

# ASME BPV CODE – KEY TO THE INTERNATIONAL MARKET

COUNTRIES ACCEPTING  
THE ASME CODE

Boilers and Pressure Vessels

IT IS A STRATEGIC  
DECISION AND  
INVESTMENT TO  
BECOME ASME  
CERTIFIED



\* Subject to approval of  
local authority

Source: [www.bsigroup.com](http://www.bsigroup.com)

TÜV NORD

# ASME N-TYPE ACCREDITATION / AUTHORIZATION

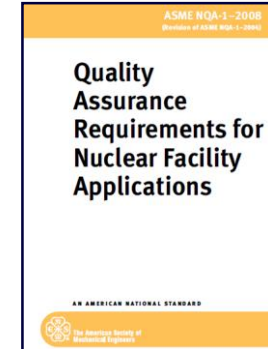
A) Contract with AIA: TÜV NORD

Assign Team for Preparation  
Establish Scope and locations  
Application to ASME  
Purchase ASME Code

## Preludium

B) QA Manual and Procedures  
ANIS acceptance  
Schedule Survey demonstration

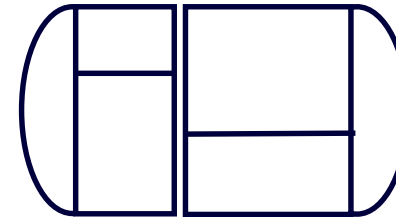
## QA Program



C) Qualification of Procedures, Demonstration to ANI  
Indoctrination and Training for personnel involved  
Qualification of Auditors, NDE and I&T Personnel  
Qualify Suppliers and MO  
Audits and Records

## Implementation

D) Prepare Demo Items  
Drawing, Part List, Design Report,  
Material Specs, POs, CMTRs, ITP,  
NDE demo, Material Supply, Welding  
Testing, Certification, ANI Inspection



F) Pre Survey with ANIS  
Follow-up  
ASME Survey with ANIS and ANI

## SURVEY

# Thank you!

**Technical support for Nuclear ASME – contacts:**

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**duba@tuev-nord.cz**  
**+420 606 690 209**

**Jan Haškovec**

**haskovec@tuev-nord.cz**  
**+420 724 418 360**