

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-IS-18189-01-00 according to DIN EN ISO/IEC 17020:2012

Valid from: 10.03.2021

Date of issue: 30.08.2021

Holder of certificate:

**TÜV SÜD Energietechnik GmbH Baden-Württemberg
Inspektionsstelle Energietechnik
Gottlieb-Daimler-Straße 7, 70794 Filderstadt**

for its inspection body Type A

Inspections in the fields:

Inspection of products, plants and processes in nuclear power plants, nuclear facilities and industrial plants (control technology, power engineering, communication technology, structural analyses and operating behaviour, machine technology, structural engineering and structural behaviour, quality assurance, material analyses and testing technologies, reactor technology and process engineering, safety analyses, fire protection and ventilation, human-technology organization, radiation protection and filter technology, reactor physics, decommissioning and disposal technology) for conformity assessment and determination of their compliance with defined requirements on the basis of an expert assessment.

Inspection instructions:

InSp-ET-IA-1.1 Rev. 7 Inspection of documents

InSp-ET-IA-1.2 Rev. 7 Inspection of construction and "Factory Acceptance Tests" (FAT)

InSp-ET-IA-1.3 Rev. 8 Inspection of operational checks and equipment qualification

Inspection category: Products, plants, processes

The management system requirements of DIN EN ISO/IEC 17020 are written in the language relevant to the operations of inspection bodies. Inspection bodies that conform to the requirements of this standard, operate generally in accordance with the principles of DIN EN ISO 9001.

The certificate together with the annex reflects the status as indicated by the date of issue.

The current status of any given scope of accreditation may be found respectively in the database of accredited bodies of Deutsche Akkreditierungsstelle GmbH <https://www.dakks.de/en/content/accredited-bodies-dakks>.

Abbreviations used: see last page

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This document is a translation. The definitive version is the original German annex to the accreditation certificate.

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- Inspection fields:**
- Electrical engineering (control technology, power engineering, communication technology)
 - Mechanical engineering (structural analyses and operating behaviour, machine technology, structural engineering and structural behaviour, quality assurance, material analyses and testing technologies)
 - Systems engineering (reactor technology and process engineering, safety analyses, fire protection and ventilation, human-technology organization)
 - Radiation protection (radiation protection and filter technology, reactor physics, decommissioning and disposal technology)

Inspection area: Industrial plants -
Systems and subsystems with safety significance

- Inspection phases:**
- (1) Design, concept review
 - (2) Qualification
 - (3) Factory approval
 - (4) Commissioning
 - (5) Inspection during operation
 - (6) Follow-up qualification
 - (7) Dismantling
 - (8) Process management and documentation

For inspection (DIN EN ISO/IEC 17020)¹: Scope for the inspection field electrical engineering

Inspection category	Inspection fields	Inspection area	Inspection phases	Inspection instructions
Products Plants Processes	Electrical engineering	Manufacturing, production supervision Qualification and quality assurance	Process management and documentation	InSp-ET-IA-1.1
Product Plant	Electrical engineering	Evaluation of environmental influences on devices and components	Design, concept review Qualification Factory approval	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3

¹ Presentation according to ILAC-G28 Guideline for the Formulation of Scopes of Accreditation for Inspection Bodies

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Inspection category	Inspection fields	Inspection area	Inspection phases	Inspection instructions
			Follow-up qualification	
Process	Electrical engineering	Evaluation of ageing effects in ageing management	Design, concept review Qualification Inspection during operation Follow-up qualification Dismantling Process management and documentation	InSp-ET-IA-1.1 InSp-ET-IA-1.3
Product Plant	Electrical engineering – Control technology	Suitability assessments of controls systems – Conventional plants	Design, concept review Qualification Factory approval Commissioning Follow-up qualification	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3
Product Plant	Electrical engineering – Control technology	Suitability assessments of process systems, control systems and components – Nuclear power plants – Nuclear plants	Design, concept review Qualification Factory approval Commissioning Follow-up qualification	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3
Product Plant	Electrical engineering – Power engineering	Suitability assessments of devices, components and equipment – Low voltage and high voltage range	Design, concept review Qualification Factory approval Commissioning Follow-up qualification	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3

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Inspection category	Inspection fields	Inspection area	Inspection phases	Inspection instructions
Product Plant	Electrical engineering – Power engineering	Suitability assessments of machines and partly completed machines – Electric drives – Energy efficiency – Energy controlling	Design, concept review Qualification Factory approval Commissioning Follow-up qualification	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3
Product Plant	Electrical engineering – Power engineering	Suitability assessments of – Transformers – Battery plants – UPS systems – Explosion protection	Design, concept review Qualification Factory approval Commissioning Inspection during operation Follow-up qualification	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3
Product Plant	Electrical engineering – Power engineering	Suitability assessments of – Safety lighting systems	Design, concept review Qualification Factory approval Commissioning Inspection during operation Follow-up qualification	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3
Plant	Electrical engineering – Power engineering	Suitability assessments for connecting installations to the voltage grid – Low, medium and high voltage range	Design, concept review Commissioning Inspection during operation	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3
Product Plant	Electrical engineering – Communication	Suitability assessments of – Remote control systems – Emergency warning systems	Design, concept review Qualification Factory approval	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3

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Inspection category	Inspection fields	Inspection area	Inspection phases	Inspection instructions
	technology		Commissioning Follow-up qualification	

For inspection (DIN EN ISO/IEC 17020)²: Scope for the inspection field mechanical engineering

Inspection category	Inspection fields	Inspection area	Inspection phases	Inspection instructions
Products Plants Processes	Mechanical engineering – Structural analyses and operating behaviour – Machine technology, structural engineering and structural behaviour – Quality assurance, material analyses and testing technologies	International suitability requirements for components, systems and installations	Design, concept review Qualification Factory approval Commissioning Inspection during operation Follow-up qualification Dismantling Process management and documentation	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3
Products Plants Processes	Mechanical engineering – Structural analyses and operating behaviour – Machine technology, structural engineering and structural behaviour – Quality assurance, material analyses and testing technologies	Qualification, Quality assurance and production supervision, Evaluation of environmental influences on devices and components	Design, concept review Qualification Factory approval Commissioning Follow-up qualification Process management and documentation	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3

² Presentation according to ILAC-G28 Guideline for the Formulation of Scopes of Accreditation for Inspection Bodies

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Inspection category	Inspection fields	Inspection area	Inspection phases	Inspection instructions
Products Plants Processes	Mechanical engineering – Structural analyses and operating behaviour – Machine technology, structural engineering and structural behaviour – Quality assurance, material analyses and testing technologies	Evaluation of ageing effects in ageing management with inspection during operation	Design, concept review Qualification Inspection during operation Follow-up qualification Dismantling Process management and documentation	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3
Products Plants Processes	Mechanical engineering – Structural analyses and operating behaviour – Machine technology, structural engineering and structural behaviour – Quality assurance, material analyses and testing technologies	Failure Mode and Effects Analysis (FMEA), risk assessment and reliability	Design, concept review Qualification Factory approval Commissioning Inspection during operation Follow-up qualification Dismantling Process management and documentation	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3

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Inspection category	Inspection fields	Inspection area	Inspection phases	Inspection instructions
Products Plants Processes	Mechanical engineering – Structural analyses and operating behaviour – Maschinentechnik, Bautechnik und Tragwerksverhalten – Quality assurance, material analyses and testing technologies	Suitability assessments on constructive designs, design and integrity	Design, concept review Qualification Factory approval Commissioning Process management and documentation	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3
Products Plants Processes	Mechanical engineering – Structural analyses and operating behaviour – Machine technology, structural engineering and structural behaviour – Quality assurance, material analyses and testing technologies	Pressurised and process components	Design, concept review Qualification Factory approval Commissioning Inspection during operation Follow-up qualification Dismantling Process management and documentation	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3

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Inspection category	Inspection fields	Inspection area	Inspection phases	Inspection instructions
Products Plants Processes	Mechanical engineering – Structural analyses and operating behaviour – Machine technology, structural engineering and structural behaviour – Quality assurance, material analyses and testing technologies	Steel construction, supporting structures	Design, concept review Qualification Factory approval Commissioning Inspection during operation Follow-up qualification Dismantling Process management and documentation	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3
Products Plants Processes	Mechanical engineering – Structural analyses and operating behaviour – Machine technology, structural engineering and structural behaviour – Quality assurance, material analyses and testing technologies	Non-Destructive Testing (NDT)	Design, concept review Qualification Factory approval Commissioning Inspection during operation Follow-up qualification Process management and documentation	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3

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Inspection category	Inspection fields	Inspection area	Inspection phases	Inspection instructions
Products Plants Processes	Mechanical engineering – Structural analyses and operating behaviour – Machine technology, structural engineering and structural behaviour – Quality assurance, material analyses and testing technologies	Suitability assessment of periodic inspections and testing techniques	Factory approval Commissioning Inspection during operation Follow-up qualification Process management and documentation	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3
Products Plants Processes	Mechanical engineering – Structural analyses and operating behaviour – Machine technology, structural engineering and structural behaviour – Quality assurance, material analyses and testing technologies	Suitability assessment of manufacturing processes and acceptance criteria (tolerances)	Qualification Factory approval Commissioning Process management and documentation	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3

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For inspection (DIN EN ISO/IEC 17020)³: Scope for the inspection field systems engineering

Inspection category	Inspection fields	Inspection area	Inspection phases	Inspection instructions
Plants	Systems engineering – Reactor technology and process engineering	<u>Reactor technology and process engineering</u> – Nuclear power plants – Nuclear plants – Nuclear system areas	Design, concept review Qualification Commissioning Inspection during operation	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3
Plants	Systems engineering – Safety analyses	<u>Deterministic safety analyses</u> – Nuclear power plants – Nuclear plants – Conventional plants – Process industry	Design, concept review Inspection during operation	InSp-ET-IA-1.1
Plants	Systems engineering – Safety analyses	<u>Probabilistic safety analyses</u> – Nuclear power plants – Nuclear plants – Conventional plants – Process industry	Design, concept review Inspection during operation	InSp-ET-IA-1.1
Products Plants	Systems engineering – Fire protection and ventilation	<u>Structural fire protection</u> – Building components (fire resistance) – Building materials (fire behaviour) – Fire compartments with fire protection closures (door, flap,	Design, concept review Qualification Factory approval Commissioning Inspection during operation Follow-up qualification	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3

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Inspection category	Inspection fields	Inspection area	Inspection phases	Inspection instructions
		bulkhead, etc.) – Escape and rescue routes		
Products Plants	Systems engineering – Fire protection and ventilation	<u>Plant fire protection</u> – Fire alarm systems – Extinguishing systems – Smoke and heat extraction systems – Fire control systems matrix and active-principle tests	Design, concept review Qualification Factory approval Commissioning Inspection during operation Follow-up qualification	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3
Products Plants	Systems engineering – Fire protection and ventilation	<u>Organisational fire protection</u> – Escape and rescue routes - Marking – Fire protection concepts – Fire protection regulations – Maintenance plan	Design, concept review Commissioning Inspection during operation	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3
Products Plants	Systems engineering – Fire protection and ventilation	<u>Ventilation technology</u> – Ventilation systems – Ventilation components – Filter units for ventilation systems	Design, concept review Qualification Factory approval Commissioning Inspection during operation Follow-up qualification	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3
Products Plants Processes	Systems engineering – Human-technology organization	<u>Operating regulations</u> – Operating manual – Testing manual – Operating instructions – Work instructions	Design, concept review Inspection during operation Process management and documentation	InSp-ET-IA-1.1

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Inspection category	Inspection fields	Inspection area	Inspection phases	Inspection instructions
		– Process descriptions		
Products Plants	Systems engineering – Human-technology organization	<u>Human Factors</u> – Ergonomics including human-machine interaction – Personnel organisation – Work system	Design, concept review Qualification Factory approval Commissioning Inspection during operation Follow-up qualification	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3

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For inspection (DIN EN ISO/IEC 17020)⁴: Scope for the inspection field radiation protection

Inspection category	Inspection fields	Inspection area	Inspection phases	Inspection instructions
Products Plants Processes	Radiation protection – Radiation protection and filter technology – Reactor physics – Decommissioning and disposal technology	<u>Industrieanlagen</u> – Nuclear power plants – Nuclear plants	Design, concept review Qualification Factory approval Commissioning Inspection during operation Follow-up qualification Dismantling Process management and documentation	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3
Products Plants Processes	– Radiation protection and filter technology – Decommissioning and disposal technology	<u>Industrieanlagen</u> – Radionuclide laboratories – Contamination tests – Leak tests	Design, concept review Qualification Factory approval Commissioning Inspection during operation Follow-up qualification Dismantling Process management and documentation	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3
Products Plants Processes	– Radiation protection – Decommissioning and disposal technology	<u>Bestrahlungsanlagen</u> – Strahlentherapien – Technische Beschleuniger (Zyklotron) – Radionuclide laboratories	Design, concept review Qualification Factory approval Commissioning Inspection during operation Follow-up qualification Dismantling Process management and documentation	InSp-ET-IA-1.1 InSp-ET-IA-1.2 InSp-ET-IA-1.3

⁴ Presentation according to ILAC-G28 Guideline for the Formulation of Scopes of Accreditation for Inspection Bodies