ISO 20815
Production Assurance Program
(Regularitetsstyringsprogram)

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NOR[illegible]-016
Regularity Man[illegible]ent Programme

ISO 20185
Production Assurance Programme

1 Scope

- ”The only requirements mandated by this International Standard are the establishment and execution of the production assurance programme (PAP).”

Annex A - innhold

- **NORSOK Z-016**
- Purpose and scope
- System boundaries and life-cycle status
- Revision control
- Distribution
- Description of overall optimisation criteria
- Definition of regularity objectives and requirements...
- Definition of performance measures...
- ...
- **Normative**

- **ISO 20815**
- Purpose and scope
- System boundaries and life-cycle status
- Revision control...
- Distribution...
- Description of overall optimisation criteria
- Definition of performance objectives and requirements...
- Definition of performance measures...
- ...
- **Informative**

Endringer?

- Nytt navn
- Ny eller modifisert terminologi og definisjoner
- Er ellers alt som før?

ISO 20815

- 4.3.1: ”A PAP shall serve as a management tool in the process complying with this International Standard”
- Det betyr at PAP må reflektere innholdet og kravene i standarden

Krav til hva som må gjøres

- 12 arbeidsprosesser
  - 7 core processes (kjerneprosesser)
  - 5 interacting processes (relasjonsprosesser?)
  - Beskrevet i kapittel 5 og Annex B
- Hvilke prosesser som bør utføres avhenger av
  - Project risk
  - Life-cycle phase

4.3.1 PAP - Objectives

- ”It (altså PAP) may contain the following:
  - Systematic planning of production-assurance work within the scope of the programme
  - Definition of optimization criteria
  - Definitions of performance objectives and requirements, if any
  - Description of the production-assurance activities necessary to fulfil the objectives, how they are carried out, by whom and when
  - Statements and considerations on interfaces of production assurance and reliability with other activities
  - Methods of verification and validation
  - A level of detail that facilitates easy updating and overall coordination”

Annex A – PAP innhold

- Terms of reference
- Production-assurance philosophy and performance objectives
- Project risk categorization
- Organization and responsibilities
- Activity schedule
- References

A.3 Terms of reference

- A general description of the PAP similar to the following may be given:

a) Purpose and scope

b) System boundaries and life-cycle status

c) Revision control showing major changes since last update

d) Distribution list which, depending on the content, shows which parties receive all or parts of the PAP

A.4 Production-assurance philosophy and performance objectives

- ... may be given

a) Description of overall optimization criteria

b) Definition of performance objectives and requirements...

c) Definition of performance measures

4.2 Optimisation process

”The main principle for optimization of design or selection between alternative design solutions is economic optimization within given constraints and framework conditions.

The achievement of high performance is of limited importance unless the associated costs are considered.

This International Standard can, therefore, be considered together with ISO 15663 (all parts).”

A.5 Project risk categorization

- A description of the project risk categorization (see 4.3.2) should be included in the PAP to justify the selection of production-assurance programme activities

4.3.2 Project risk categorization

- Anbefaling om at en av de første aktivitetene som utføres er kategorisering av prosjektet mhp teknisk risiko
- Dette danner grunnlaget for å bedømme hvilke aktiviteter (arbeidsprosesser) som bør utføres
- Tre risikoklasser
  - High risk
  - Medium risk
  - Low risk

Table 1 – Project risk categorization

Technology	Operating envelope	Technical system scale and complexity	Organizational scale and complexity	Risk class	Description
Mature technology	Typical operating conditions	Small scale, low complexity, minimal change of system configuration	Small and consistent organization, low complexity	Low	Low budget, low-risk project using field-proven equipment in the same configuration and with the same team under operating condtions similar to previous projects
Mature technology	Typical operating conditions	Moderate scale and complexity	Small to medium organization, moderate complexity	Low or medium	Low- to moderate-risk project using field-proven equipment in an operating envelope similar to previous projects but with some system and organizational complexity
Novel or non-mature technology for a new or extended operating environment	New, extended or aggressive operating environment	Large scale, high complexity	Large organization, high complexity	Medium or high	Moderate- to high-risk project using either novel or non-mature equipment or with new or extended operating conditions. Project involves large, complex systems and management organizations

Table 2 – Overview of production-assurance processes versus risk levels and life-cycle phases

Production assurance processes for asset development				Life-cycle phase						
				Pre-contract award		Post-contract award				
Low-risk projects	Medium-risk projects	High-risk projects	Process name and number	Feasibility	Conceptual design	Engineering	Procurement	Fabrication/Assembly/Testing	Installation and commisioning	Operation
–	X	X	1. Production-assurance requirements	X	X	X	X	–	–	–
X	X	X	2. Production-assurance planning	X	X	X	X	X	X	X
–	X	X	3. Design and manufacture for production assurance	–	X	X	–	X	X	X
X	X	X	4. Production assurance	X	X	X	X	X	X	X
–	X	X	5. Risk and reliability analysis	X	X	X	–	–	–	–
X	X	X	6. Verification and validation	X	X	X	–	–	–	–
X	X	X	7. Project risk management	X	X	X	X	X	X	X
–	–	X	8. Qualification and testing		X	X	X	X		
X	X	X	9. Performance data tracking and analysis	–	–	–	–	–	X	X
–	–	X	10. Supply chain management	–	–	–	X	–	–	–
X	X	X	11. Managemnet of change	–	X	X	X	X	X	X
X	X	X	12. Organizational learning	X	X	X	X	X	X	X

Kost-nytte

- 1 Scope
  - ”This International Standard recommends that the listed processes and activities be initiated only if they can be considered to add value.”

A.6 Organization and responsibilities

a) Description of the organization and responsibilities...
b) Description of the action management system...
   - (Action management system – del av process 4 production assurance)
c) Description of the verification and validation functions specifying planned third party verification activities related to production assurance/reliability (if any)

A.7 Activity schedule

- Overview of the production-assurance activities during life-cycle phases which may contain a table similar to table 2 to indicate past and future production assurance activities
- List of the plans ... for product assurance/reliability activities showing main project milestones and interface activities
- Clear statements of the relationship between the various production assurance activities, e.g. input/output relationship, timing, etc.

Når skal PAP lages?

- PAP skal lages for de forskjellige faser i et utviklingsprojekt
  - Kan dekke en eller flere faser
- PAP for anlegg som er i produksjon
- PAP oppdateres når det er behov.

Hvem skal lage PAP?

- 4.3.1: ”The PAP is the only mandatory deliverable in this standard.”
- Betyr det at alle som skal følge standarden må lage PAP for å dekke sitt arbeid?

Aktører	Lage PAP?
• Operatør	• Ja, i alle faser
• Ingeniørtjenester	• For FEED og detail eng.
• Innkjøp	• Nei
• Byggeverft	• Nei
• Pakkeleverandør	• Bare unntaksvis ved store pakker, med element av utvikling, high risk
• Utstyrsleverandør	• Nei
• Konsulent/3.parts verifikasjon	• Nei