Comments and observations of NEK/NK18A

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ID[1]	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment[1]	Comments	Proposed change	Observations of the secretariat
1				GE	The foreword reflects an international specification. PSA has removed the reference to this specification many years ago. DSB is considering the same		Review foreword. Delete line 125
2	45			GE	Not all cable types are mentioned in the cable descriptions	Update A.1 Cable descriptions in the table of contents	Accepted
3	46	Forward		GE	Cable type designation, - "P4" and equivalents. With extended oil/MUD performance classes, new cable type designations and marking are required.	Proposal described in appendix 1 table 1 and appendix2	Accepted Update list of content
4	46	A.1.1.1 A.1.1.2 A.1.1.3	Cable description	ED	P1, P2, P3 cable types are excluded from the cable list of Contents	Add cable types on the list; A.1.1.1 P1 RFOU/TFOU 0,6/1 kV A.1.1.2 P2 RFOU/TFOU 3,6/6 kV A.1.1.3 P3 RFOU/TFOU 6/10(12) kV	Accepted (see PR01)
5	54, 77 ~ 90	CONTENTS	Cable description	TE	XLPE and other compounds are indicated at the end of the 4-letter code.	For fire resistant cable types, it must be possible to distinguish between the insulation material used. For example: BFOU-R BFOU-T BFOU-Si (silicon rubber) BFOU-X (as specified by manufacturer)	Disagree, however; Revised text to be implemented Update table 5 Modifications to ANNEX A
6	100 / 155			General	Title: "Cables for offshore installations halogen-free and/or, mud resistant". The title does not reflect the various oil /mud resistance categories	NEK TS 606 Halogen free cables for offshore installations	Partly accepted: New title: Halogenfree low smoke and fire retardant/resistant (HFFR-LS)
7	137	Foreword	c)	Editorial	The optional level are three	Substitute " two" with "three"	Accepted
8	139	Foreword	c)	Technical	Hydraulic oil	Hydraulic/gear oil	Accepted. Gear oil added throughout the standard

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9	140			Editorial	Exxon HC fire curve has been removed. International recognized curve for HC fire has been renamed to EN 1363-2.	Exxon HC fire curve has been replaced by the international specification EN 1363-2.	Accepted with modification
10	144	Foreword	d)	Technical	BS 8491 is missing	Add at the end of the sentence: "or water jet according to BS 8491.	Accepted
11	151	Foreword		General	Include additional significant changes	UX is renamed to XU, and design criteria has been included Cable code designations has been changed (table 5) Sheath marking requirements has been changed The appendix A has been restructured Min UV resistance requirements for the outer sheath has been included	Disagree. UX is an established term
12	144	Foreword	d)	Techinal	BS 8491 is missing	Add at the end of the sentence: "or water jet according to BS 8491.	Accepted
13	192			Editorial	BS 8491 is missing in the list of normative references	Add BS 8491	Accepted
14	197			Editorial	The definition of base oil is un-precise The term is defined but not used elsewhere in the document.	Base Oil is the name given to lubrication grade oils initially produced from refining crude oil (mineral base oil) or through chemical synthesis (synthetic base oil). Base oil is typically defined as oil with a boiling point range between 550 and 1050 F, consisting of hydrocarbons with 18 to 40 carbon atoms. This oil can be either paraffinic or napthenic in nature depending on the chemical structure of the molecules (ref also API 1509).	Delete clause 3.1
15	206	4.1		TE	Why 10 kV/10 sec. pre-test for BFOU 250 V cable?	Either reduce initial test voltage or use 3,6 kV as for as for non fire-resistant cables.	Disagree, however; Text is to be revised and clarified.
16	212	4.2 and forward		Editorial and	The outer sheath requirements are un-precise. Requirements are too severe for category a,-	Proposal described in appendix 1	

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				technical	the minimum requirements		
17	213	4.2		GE	Make an clear statement/listing in this chapter of which subclause that are covered by the *) Mandatory requirement for NEK 606 cable descriptions containing SHF2 MUD RESISTANT and which subclause that is not covered by the SHF2 MUD (outer sheet letter U in the annex A listing)		Partly accepted: 4.2 is deleted.
18	231/379	Forward		General	Terminology inconsistency – SHF2 MUD versus SHF MUD	Proposal described in appendix 1	Accepted
19	232	4.2.4			How will this clause be covered in the practical life??? Normally is the cable defined to a MUD area in a design phase and full range project used of liquid is usually know at a later stage. This is at project specific demand and should not be listed in the standard.		Partly accepted: Text revised
20	257	4.4.2	Fire resistant cables with water spray	TE	This chapter refers to EN 50200 Annex E for water spraying conditions	Lines 493, 494, 495, 496, and 497, NEK 606 refers also to BS 8491 for water spray alternative standard. This BS 8491 has to be mentioned in chapter 4.4.2, line 257.	Accepted
21	257 - 260	4.4.2		Technical	“Fire resistance cables shall be tested according to IEC 60331-1/2 or IEC 60331-11, , -21, -25 water spray according to EN 50200 Annex E. Minimum 90 min fire plus 15 minutes water spray before break down” can be misunderstood	Fire resistance cables shall be tested according to IEC 60331-1/2 or IEC 60331-11, , -21, -25 for 105 minutes without voltage breakdown or conductor rupture. During the last 15 minutes, water spray shall be applied according to EN 50200 Annex E. The flame and shock (only for IEC 60331-1/2) shall continue to be applied during the water spay.	Accepted
22	269	4.5.1.1		Technical	No clear time given for HC testing. (Appears to be 60 minutes but not as firm as it should be) also 30 minutes is given as a form of choice or in 272 it is said that the time could be agreed	Either standardize on 60 minutes or give a minimum of 30 minutes (and times above that shall be agreed for each test / cable application in question)	Accepted; Minimum 30min implemented

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					between customer and approval authority (whoever that is). In other words : somewhat confusing this.		
23	306	4.7	Content of Halogen	TE	If NEK follows latest IEC Std., content of Halogen shall apply not only IEC 60754-1/2 but also Fluorine content test (IEC 60684-2) .	All cables shall be halogen-free according to IEC 60754-1/2 and IEC 60684-2.	Partly accepted; Revise 4.7: All cables shall be halogen free according to IEC 60092-350 and tested according to IEC 60754-1/2 and IEC 60684-2.
24	327 & 328			Editorial	Table number	Update the table number	Accepted
25	347 - 348			Technical	Depending of the formulation, the insulation of MV cables could be different than off-white	Delete “off-white” as colour request for MV cables	Partly accepted; ”grey” added as alternative
26	349			Technical	There is no reasons to maintain a different colour code between LV 3 cores and MV 3 cores. The tape / thread could be longitudinally applied under the screen.	Align the colours of tape / thread to HD308 S2: Brown, Black, Grey. Delete “in spiral around the core”.	Disagree; No good reason to change colours is found.
27	351	5.2	Sheath marking	GE	Additional marking or identification method is necessary such as standard symbol. - 2 oil resistant grades. - JF resistant cable - Cable with Class 5 conductor - For fire resistant types, in addition insulation type	Provide more marking examples as below, Example 3 Minimum oil resistant – without any marks Enhanced oil resistant – OR Example 4 JF resistant cable – ISO 22899-1 (30) Example 5 Class 2 conductor : S2/S6 RFOU (c) Class 5 conductor : S2/S6 RFOU (c) – FLEX Example 6 See 54, 77~90	Accepted; More examples to be added
28	360-368			GE	Is it necessary to use the manufacturers name in		Accepted

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					the examples? Names may also change over time.		
29	370 - 371	5.3.1 – 5.3.2		Technical	Often the customers require other colours (e.g.: orange for low voltage resistant cables, blue for intrinsically safe	Insert the following sentence before line 370: "Unless otherwise specified by the purchaser at the time of ordering, - "	Accepted for 5.3.1
30	379	5.4	Interpretation table	TE	Same as line 54, 77 ~ 90. There is no difference on cable symbol or marking for EPR and XLPE insulated fire resistant cable.	Additional information to be added. For example: BFOU-R BFOU-T BFOU-Si (silicon rubber) BFOU-X (as specified by manufacturer)	Disagree, however; New first letter for silicone is accepted
31	379	5.4	Table	TE	For letter insulation, "U" has been removed	"U" means HFFR thermoset EVA insulation. Is it important to maintain or not?	"U" will not be included. EVA is not accepted
32	379	5.4	Table	TE	For letter bedding / inner covering, "Y" has been removed	"Y" means (screen PE/PP). Is it important to maintain or not?	"Y" will not be maintained. PE/PP is not relevant
33	446 451 454 468 473	A.1.2 A.1.4 A.1.5 A.1.12 & 13 A.1.15	Cable description	ED/TE	Class 5 conductor is excluded from conductor.	Conductor information should be changed. As below; Tinned stranded copper in accordance with IEC 60228, class 2 or class 5.	Accepted.
34	379, 449, General			TE	For fire resistant cable types BFOU: Description of insulation type is restricted.	Suggestion: "Fire resistant layer" to replace "helically wrapped tape" as description	Reserve B for Mica tape. Add S for Silicone rubber insulation. Consider to accept ceramic silicone as a IEC 60092-360 S95 with same test requirements.
35	456 459 61 464 465	A.1.6	Cable description	ED/TE	Outer sheath SHF MUD	As defined in chapter 3.3 (line 203), and chapter 4.2.3 (line231), we have to refer now to SHF2 MUD RESISTANT reference, not only SHF MUD	Accepted.

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	468 470 478 479 507 508 509 510						
36	470	To be added after A.1.13		ED/TE	There are introduced some new P types: P36 - P40, which are fire resistant RFOU/TFOU types, but missing is High voltage cables/BFOU with Mica taped conductors or other fire-resistant insulations.	Add cable type BFOU subsequently (higher than 12 kV) for voltages 17,5, 24, and 36 kV (maximum voltage) after line 470, according to IEC 60331-xx.	Partly accepted; Keep BFOU types P6/P13 and P7/P14 with note: Due to risk of PD, normally only use for emergency unless IEC 60092-354 PD requirements are met.
37	473			TE	Insulation shall be named "T" if XLPE insulation/thermoset, but "I" is thermoplastic.	Change from IFLI to TFLI	Accepted "I" removed as insulation material according to IEC 60092-360. Rename to TFLI.
38	451, 454, 468, 470, 474, 487, 505, 506, 509, 510, 513, 514	A.1.4 A.1.5 A.1.12 A.1.13 A.1.16 A.1.26 A.1.35 A.1.36 A.1.39 A.1.40 A.1.43 A.1.44		TE	Insulation: Why exclude XLPE in BFOU cable types?	See 449. Use generic description: "HFFR-LS insulation system" to cover all possible solutions.	Partly accepted; All P- and S- types accepted with both EPR and XLPE insulation. Consider to allow also HEPR insulation.
39	493 494 495 496 498	A.1.28	Cable construction	TE	Cable designation mentions P36 RFOU/TFOU – Fire resistant	Fire resistant is not written in performances/description, only flame retardant. "Fire resistant" to be added	Accepted.
40	493	A.1.28	Cable	TE	Optional layers should be more generic to open for	Replace "Optional Fire protection" and "Optional	Accepted, however

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	~ 500	~ A.1.32	construction		more solutions, thus focus on the core requirements: Fire performance and SHF1, SHF2, or SHF2 MUD RESISTANT.	Taping" with "Fire resistant layer".	Replace with: Optional fire protective layer(s) including outer sheath SHF1 or SHF2 or SHF2 MUD resistant.
41	521	A.1.50	Cable type F5 QFCB	TE	According to IEC Std., sheath should have a specific thickness and mechanical property.	Without sheath requirement, it should be changed from "Sheath" to "Mud resistant covering". As below; Mud resistant covering : Mud resistant and halogen-free thermoplastic compound	Disagree; There are both dimensional and mechanical requirements to sheath.
42		Annex A		General	As a number of differences between only are related to the outer sheath, there is the possibility to simplify the entire Annex A	Rewrite the entire Annex A according proposal in appendix 4	Noted.

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