FEICHUN CABLES
Anhui FeiChun Special Cable Co., Ltd. · 安徽飞纯特种电缆有限公司

PRODUCT CATALOGUE 2026 | NUCLEAR POWER PLANT CABLES | 0.6/1 kV · 300/500 V | HALOGEN-FREE · LOW SMOKE

FC-NPP Series

Radiation-Resistant Cables for Nuclear Power Plants

Halogen-free, flame-retardant power, control and instrumentation cables with electron-beam cross-linked polyolefin insulation, engineered for reactor containment, auxiliary buildings and safety-related circuits. Radiation classes R1 to R3, with fire-resistant (FR) option.

Up to 1 MGy
Design radiation class R3 (total integrated dose)

90 °C
Maximum continuous conductor temperature

3 series · 29 variants
Power, control and instrumentation cables

40 years
Design service life; 60-year extension by project assessment

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01 Product range overview

FC-NPP is FeiChun's range of **radiation-resistant, halogen-free cables for nuclear power plants**. Insulation and outer sheath are made from electron-beam cross-linked halogen-free polyolefin compounds with a radiation-stabiliser system, so the cable keeps its electrical and mechanical properties after decades of gamma exposure, heat, humidity and, where specified, accident conditions.

The series covers the three cable families needed in every plant: **power** (FC-NPP-P), **control** (FC-NPP-C) and **instrumentation** (FC-NPP-I). All three share the same material system, tinned copper conductors, flame-retardant low-smoke construction and traceable lot-level manufacturing records.

R1 · R2 · R3
Design radiation classes 0.2 / 0.5 / 1.0 MGy

HFFR
Halogen-free, flame-retardant, low smoke

Tinned Cu
Class 2 conductors, corrosion-resistant

–40…+90 °C
Ambient range, fixed installation

Range at a glance

Series	Cable type	Rated voltage	Conductor	Variants	Typical use	Page
FC-NPP-P	Multi-core power cable, 3 cores	0.6/1 kV	Tinned copper, class 2, 6–240 mm²	12	Motors, pumps, valve actuators, auxiliary power	7
FC-NPP-C	Multi-core control cable, 4–37 cores	0.6/1 kV	Tinned copper, class 2, 1.5 and 2.5 mm²	10	Protection, interlocking, switchgear and valve control	8
FC-NPP-I	Twisted-pair instrumentation cable, individually and overall screened	300/500 V	Tinned copper, class 2, 0.75 mm²	7	Sensors, transmitters, neutron-flux and process signals	8
-FR option	Fire-resistant execution of P, C and I	as base cable	Mica-tape circuit integrity layer	on request	Circuits required to operate during fire	9

All variants: radiation-resistant HFFR outer sheath, black as standard; sheath colours for separation trains on request. Dimensions and ratings are given on pages 7 and 8.

Why specify FC-NPP

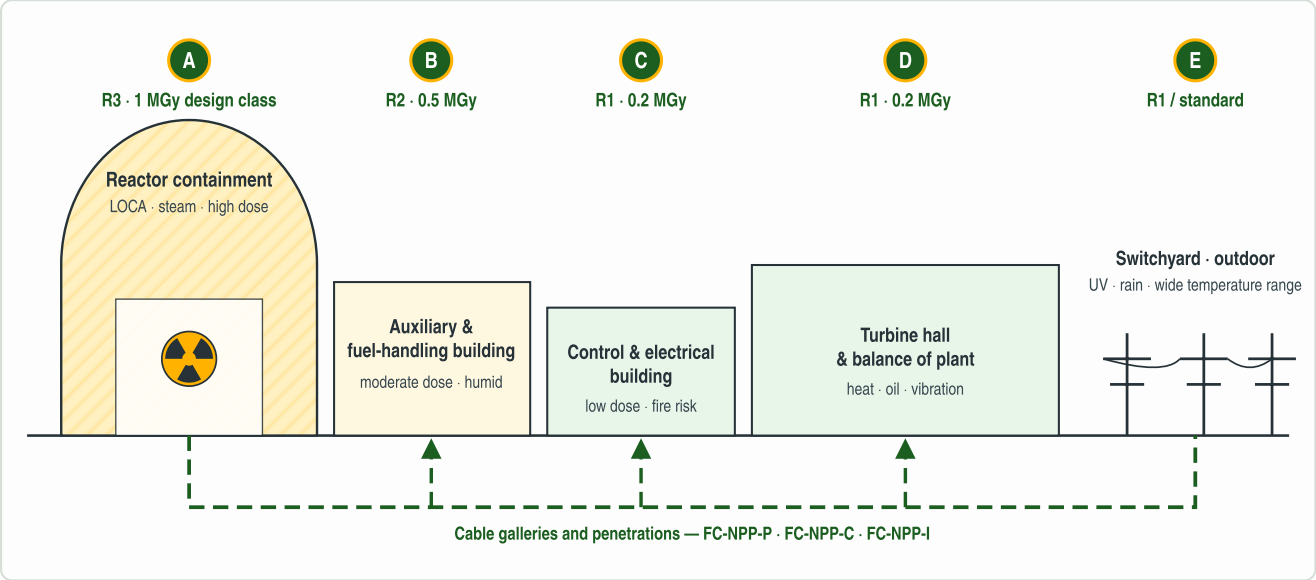
- **Radiation-resistant materials** — electron-beam cross-linked polyolefin insulation and sheath
- **Halogen-free** — no corrosive acid gas in fire; low smoke density
- **Steam and moisture resistant** — designed for humid, high-temperature containment atmospheres
- **Complete family** — power, control and instrumentation share one material system
- **Fire-resistant option** — circuit integrity for fire-safety circuits
- **Traceable** — lot-level records from raw material to finished reel

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02 Where the cables are used: plant areas and radiation classes

Cable selection in a nuclear power plant starts with the **plant radiation zone map**: the integrated gamma dose a cable will see over its service life, the thermal and humidity environment, and whether the circuit must survive a design-basis accident. The schematic and table below show how FC-NPP series and radiation classes are normally assigned to the main plant areas.



Schematic, not to scale. Radiation classes are design classes of total integrated dose (TID) for normal 40-year operation plus accident dose; see page 6 for definitions. The final class for each cable route is set by the project dose map.

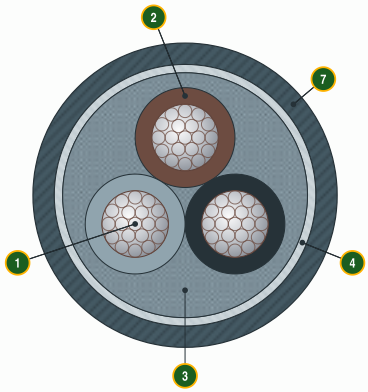
Recommended series by plant area

Zone	Typical areas	Environment	Radiation class	Series
A Inside containment	Reactor building, reactor coolant system, steam-generator compartments, containment penetrations	20–60 °C normal, humid; steam, pressure and chemical spray during LOCA; highest dose	**R3** (1 MGy)	P, C, I (+FR)
B Auxiliary and fuel-handling buildings	Spent-fuel pool areas, waste handling, chemical and volume control, pump rooms	5–50 °C, high humidity, local hot spots; moderate dose	**R2** (0.5 MGy)	P, C, I
C Control and electrical buildings	Main control room, cable-spreading rooms, switchgear and battery rooms	15–40 °C; high cable density; fire-safety critical	**R1** (0.2 MGy)	C, I, P (+FR)
D Turbine hall and balance of plant	Turbine generator, feed-water and condensate systems, auxiliary boilers	10–70 °C near hot piping; oil, vibration	**R1** (0.2 MGy) or standard	P, C
E Switchyard and outdoor	Switchyard, ultimate-heat-sink pump house, cooling-water intake, yard trenches	−30…+50 °C, UV, rain, ground-water	**R1** or standard	P, C, I

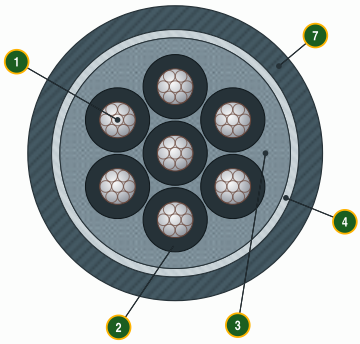
Choosing a class: use the project's zone dose map to select the radiation class that equals or exceeds the specified total integrated dose for that cable route. If your dose is above 1 MGy, or the circuit has a special accident profile (temperature, pressure, spray chemistry), contact FeiChun Technical Support for a project-specific design.

03 Construction and materials

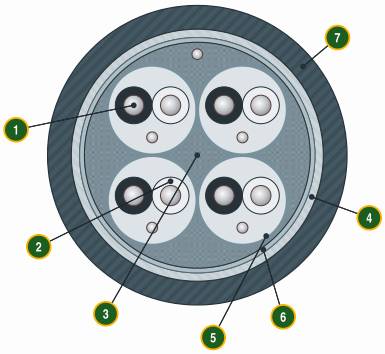
All FC-NPP cables use one material system: **tinned copper conductors**, **electron-beam cross-linked halogen-free polyolefin insulation** and a **radiation-resistant halogen-free flame-retardant outer sheath**. Cross-linking by electron beam gives a thermoset insulation that does not melt or flow at accident temperatures and resists radiation-induced embrittlement.



FC-NPP-P
Power cable, 3 cores
Drawing: 3×95 mm², 0.6/1 kV



FC-NPP-C
Control cable, multi-core
Drawing: 7×1.5 mm², 0.6/1 kV



FC-NPP-I
Instrumentation cable
Drawing: 4×2×0.75 mm², 300/500 V

Cross-sections are schematic and not to scale; other sizes are scaled proportionally.

Legend: elements and materials

Pos.	Element	Material and design	Series
1	Conductor	Tinned annealed copper, flexible-stranded class 2 per IEC 60228; tinning protects against corrosion and aids termination	P, C, I
2	Insulation	Electron-beam cross-linked halogen-free polyolefin (XLPO), 90 °C. P: brown, black, grey. C: black cores with white numerals. I: black and white cores per pair	P, C, I
3	Filler	Halogen-free, radiation-resistant fillers to round the cable core	P, C, I
4	Inner covering	Extruded halogen-free inner covering bedding the core assembly	P, C, I
5	Pair screen	Aluminium/polyester tape with tinned copper drain wire, one per twisted pair	I
6	Overall screen	Aluminium/polyester tape with tinned copper drain wire over all pairs	I
7	Outer sheath	Radiation-resistant, halogen-free, flame-retardant polyolefin (HFFR); black as standard	P, C, I

Design features for nuclear service

- **Radiation-stabilised compounds:** antioxidant and radiation-stabiliser package tuned for gamma exposure
- **Thermoset insulation:** cross-linked by electron beam, stable to the conductor short-circuit temperature of 250 °C
- **Tinned conductors:** no copper oxidation under heat and humidity
- **Halogen-free:** no chlorine or bromine, so no hydrochloric or hydrobromic acid during fire or radiolysis
- **Screened instrumentation pairs:** low-noise signal transmission with pair and overall screening
- **Moisture barrier by design:** compact core, extruded inner covering and thick sheath limit water ingress

04 Technical characteristics

The table lists design characteristics shared by the FC-NPP series. Project-specific values (accident profile, dose, ageing programme) are agreed in the technical data sheet issued with each quotation.

Parameter	FC-NPP-P and FC-NPP-C	FC-NPP-I
Electrical		
Rated voltage U_0/U (U_m)	0.6/1 (1.2) kV AC	300/500 V AC
Max. DC operating voltage	0.9/1.8 kV	—
Routine test voltage (5 min)	3.5 kV AC	2.0 kV AC
Conductor	Tinned copper, class 2 (IEC 60228)	Tinned copper, class 2 (IEC 60228)
Current-carrying capacity	See tables, page 7 and 8 (free air, 30 °C)	Signal circuits; see page 8
Thermal		
Max. conductor temperature, continuous	+90 °C	+90 °C
Max. conductor temperature, short circuit (5 s)	+250 °C	+250 °C
Ambient temperature, fixed installation	−40 °C to +90 °C	−40 °C to +90 °C
Min. installation temperature	−10 °C	−10 °C
Mechanical		
Min. bending radius, static	8 × D	6 × D (screened multi-pair)
Max. pulling force (pulling eye on conductors)	50 N/mm² of total copper cross-section	50 N/mm² of total copper cross-section
Cable type	Fixed installation, trays, ducts, conduits	Fixed installation, trays, ducts, conduits
Fire and smoke behaviour		
Flame propagation, single cable	IEC 60332-1-2	IEC 60332-1-2
Flame propagation, bunched cables	IEC 60332-3-24 (category C) and IEEE 383 vertical tray	IEC 60332-3-24 (category C) and IEEE 383 vertical tray
Halogen content, corrosivity of gases	IEC 60754-1 / -2: pH ≥ 4.3, conductivity ≤ 10 µS/mm	IEC 60754-1 / -2: pH ≥ 4.3, conductivity ≤ 10 µS/mm
Smoke density	IEC 61034-2: light transmittance ≥ 60 %	IEC 61034-2: light transmittance ≥ 60 %
Halogen-free	Yes: insulation, filler, inner covering and sheath	Yes: insulation, filler, inner covering and sheath
Environmental and radiation		
Radiation class (design)	R1 0.2 MGy · R2 0.5 MGy · R3 1.0 MGy	R1 0.2 MGy · R2 0.5 MGy · R3 1.0 MGy
Humidity	Up to 100 % RH, condensing	Up to 100 % RH, condensing
Water, steam and chemical spray	Resistant; accident profile qualified per project	Resistant; accident profile qualified per project
UV, ozone, oil	Resistant	Resistant
Design service life	40 years; 60 years by ageing assessment	40 years; 60 years by ageing assessment

D = outer diameter of the cable. Ratings are design values at the stated reference conditions. Temperature de-rating factors are given on page 7.

05 Radiation resistance, ageing and qualification approach

Radiation resistance is expressed as the **total integrated dose (TID)** a cable can absorb while still meeting its electrical and mechanical acceptance criteria. FC-NPP cables are specified in three design classes.

Class	Design total integrated dose	Typical location	Typical plant area
R1	≥ 0.2 MGy (200 kGy)	Low-dose areas	Control and electrical buildings, turbine hall, outdoor
R2	≥ 0.5 MGy (500 kGy)	Moderate-dose areas	Auxiliary and fuel-handling buildings, penetration areas
R3	≥ 1.0 MGy (1 000 kGy)	High-dose areas	Inside containment, near reactor coolant system
R-X	> 1.0 MGy	Special cases	Project-specific design, on request

TID = integrated gamma dose from normal 40-year operation plus the post-accident dose defined in the project design basis. Classes are design classes; confirmation of qualified status for a given project is described below.

Material property acceptance criteria (design)

Property	Initial	After thermal ageing and irradiation to rated dose
Insulation tensile strength	≥ 12.5 MPa	Retained per design criteria
Insulation elongation at break	≥ 200 %	≥ 50 % absolute
Insulation hot-set (200 °C, 15 min, 20 N/cm²)	Elongation under load ≤ 175 %; permanent set ≤ 15 %	—
Sheath tensile strength	≥ 10 MPa	Retained per design criteria
Sheath elongation at break	≥ 150 %	≥ 50 % absolute
Sheath oxygen index	≥ 30 %	—

Typical qualification test programme for safety-related service

Safety-related (Class 1E) cables used inside containment are normally qualified by a sequence of ageing and accident tests under **IEEE 323 / IEC 60780-323** and **IEEE 383**. The sequence below is the usual structure; exact levels follow the project specification.

Step	Test	Purpose
1	Baseline tests	Dimensions, conductor resistance, voltage withstand and mechanical properties of unaged specimens
2	Accelerated thermal ageing	Simulates 40-year (or 60-year) service at operating temperature (Arrhenius method)
3	Gamma irradiation, normal-service dose	Co-60 irradiation to the normal-operation share of the total integrated dose (IEC 60544 series)
4	Mechanical and bending test	Wrap-around mandrel test on the aged specimen, followed by voltage withstand
5	Flame propagation test	Vertical tray test on aged cable (IEEE 383 / IEC 60332-3-24)
6	Accident irradiation	Remaining share of the total integrated dose
7	LOCA / design-basis accident simulation	Steam, pressure, temperature transient and chemical spray per project profile
8	Post-accident functional test	Voltage withstand in water and insulation resistance after exposure

Important: this catalogue gives product design data and is not a qualification report. Use of FC-NPP cables in safety-related (Class 1E) circuits requires project-specific qualification evidence agreed between the purchaser, the plant designer and FeiChun. Qualification scope and test reports are confirmed at the quotation stage.

06 FC-NPP-P power cable data, 0.6/1 kV (12 variants)

Three-core power cable with tinned class 2 copper conductors, XLPO insulation and HFFR sheath for fixed installation in trays, ducts and conduits. Core colours: brown, black, grey.

Type cores × mm²	FeiChun article no.	Cond. Ø max mm	Insul. nom. mm	Sheath nom. mm	Outer diameter nom. mm	Outer diameter max. mm	Min. bend radius mm	Mass approx. kg/km	Max. pull force N	R_{20} max Ω/km	Current, in air A	Short-circuit current kA (1 s)
3×6	FC-NPP-P-001	3.3	1.0	1.8	17.0	18.0	144	460	900	3.11	54	0.86
3×10	FC-NPP-P-002	4.3	1.0	1.8	19.2	20.0	160	630	1 500	1.84	75	1.43
3×16	FC-NPP-P-003	5.4	1.0	1.9	21.7	23.0	184	870	2 400	1.16	100	2.29
3×25	FC-NPP-P-004	6.7	1.2	2.1	26.2	27.5	220	1 310	3 750	0.734	127	3.57
3×35	FC-NPP-P-005	7.9	1.2	2.2	29.0	30.5	244	1 700	5 250	0.529	158	5.00
3×50	FC-NPP-P-006	9.1	1.4	2.3	32.6	34.0	272	2 290	7 500	0.391	192	7.15
3×70	FC-NPP-P-007	10.9	1.4	2.5	37.3	39.0	312	3 090	10 500	0.270	246	10.01
3×95	FC-NPP-P-008	12.8	1.6	2.7	42.7	44.5	356	4 090	14 250	0.195	298	13.58
3×120	FC-NPP-P-009	14.3	1.6	2.8	46.1	48.0	384	4 990	18 000	0.154	346	17.16
3×150	FC-NPP-P-010	15.9	1.8	3.0	51.2	53.5	428	6 200	22 500	0.126	395	21.45
3×185	FC-NPP-P-011	17.7	2.0	3.2	56.4	59.0	472	7 570	27 750	0.100	450	26.45
3×240	FC-NPP-P-012	20.2	2.2	3.4	63.0	66.0	528	9 640	36 000	0.0762	538	34.32

Current in air: three loaded cores, conductor 90 °C, ambient 30 °C, single cable in free air (reference values; apply the factors below for other ambient temperatures, grouping and cable-tray fill). Min. bend radius = 8 × maximum outer diameter, static. Max. pull force = 50 N/mm² × total copper cross-section. Short-circuit current = 0.143 kA/mm² × conductor cross-section for 1 s (XLPO, 90 °C → 250 °C); for another duration t (0.1–5 s) divide by √t. Dimensions are nominal values with usual manufacturing tolerances; mass is approximate. Other sizes, 4-core and single-core versions are available on request.

Construction details

Element	Description
Conductor	Tinned annealed copper, class 2 per IEC 60228
Insulation	Electron-beam cross-linked halogen-free polyolefin (XLPO), rated 90 °C; core colours brown, black, grey
Core assembly	Three cores laid up with halogen-free fillers; extruded halogen-free inner covering
Outer sheath	Radiation-resistant halogen-free flame-retardant polyolefin (HFFR), black; thickness increases with cable size

Ambient temperature correction (conductor 90 °C)

Ambient °C	30	35	40	45	50	55	60	65	70
Factor	1.00	0.96	0.91	0.87	0.82	0.76	0.71	0.65	0.58

Reference ambient 30 °C. Inside containment, with normal ambient of 50–60 °C, use the factors 0.82–0.71.

Selection tips

- Check voltage drop on long motor feeders; use R_{20} from the table
- Take the post-accident current and ambient into account for safety circuits
- Specify the radiation class (R1, R2, R3) with each article number when ordering

07 FC-NPP-C control cable data, 0.6/1 kV (10 variants)

Multi-core control cable with numbered black cores and tinned class 2 copper conductors, XLPO insulation and HFFR sheath. A green-yellow earth core can be added on request.

Type cores × mm²	FeiChun article no.	Cond. Ø max mm	Insul. nom. mm	Sheath nom. mm	Outer diameter nom. mm	Outer diameter max. mm	Min. bend radius mm	Mass approx. kg/km	Max. pull force N	R_{20} max Ω/km	Current per core A
4×1.5	FC-NPP-C-001	1.6	0.8	1.8	12.9	14.0	84	230	300	12.2	18
7×1.5	FC-NPP-C-002	1.6	0.8	1.8	14.8	16.0	96	320	525	12.2	15
12×1.5	FC-NPP-C-003	1.6	0.8	1.8	18.5	19.5	117	500	900	12.2	12
19×1.5	FC-NPP-C-004	1.6	0.8	2.0	21.6	23.0	138	720	1 420	12.2	10
24×1.5	FC-NPP-C-005	1.6	0.8	2.0	23.8	25.5	153	880	1 800	12.2	9
37×1.5	FC-NPP-C-006	1.6	0.8	2.0	28.0	29.5	177	1 250	2 780	12.2	8
4×2.5	FC-NPP-C-007	2.0	0.8	1.8	13.9	15.0	90	290	500	7.56	25
7×2.5	FC-NPP-C-008	2.0	0.8	1.8	16.0	17.0	102	420	875	7.56	20
12×2.5	FC-NPP-C-009	2.0	0.8	2.0	20.5	22.0	132	680	1 500	7.56	16
19×2.5	FC-NPP-C-010	2.0	0.8	2.0	23.6	25.0	150	960	2 380	7.56	14

Current per core: all cores loaded, conductor 90 °C, ambient 30 °C, in free air; reduced by the multi-core grouping factor. Min. bend radius = 6 × maximum outer diameter, static. Max. pull force = 50 N/mm² × total copper cross-section.

FC-NPP-I instrumentation cable data, 300/500 V (7 variants)

Twisted-pair instrumentation cable with individually screened pairs and an overall screen, each screen with a tinned copper drain wire. Suitable for analogue and digital signals from sensors, transmitters and neutron-flux channels.

Type cores × mm²	FeiChun article no.	Cond. Ø max mm	Insul. nom. mm	Sheath nom. mm	Outer diameter nom. mm	Outer diameter max. mm	Min. bend radius mm	Mass approx. kg/km	Max. pull force N	R_{20} max Ω/km	Mutual capacitance nF/km at 800 Hz
1×2×0.75	FC-NPP-I-001	1.05	0.45	1.5	9.8	10.5	63	120	75	24.8	≤ 100
2×2×0.75	FC-NPP-I-002	1.05	0.45	1.5	14.8	16.0	96	240	150	24.8	≤ 100
4×2×0.75	FC-NPP-I-003	1.05	0.45	1.8	17.5	18.5	111	340	300	24.8	≤ 100
8×2×0.75	FC-NPP-I-004	1.05	0.45	1.8	21.9	23.0	138	530	600	24.8	≤ 100
12×2×0.75	FC-NPP-I-005	1.05	0.45	2.2	27.0	28.5	171	800	900	24.8	≤ 100
16×2×0.75	FC-NPP-I-006	1.05	0.45	2.2	30.7	32.5	195	1 020	1 200	24.8	≤ 100
24×2×0.75	FC-NPP-I-007	1.05	0.45	2.2	35.2	37.0	222	1 340	1 800	24.8	≤ 100

Pair designation: pairs × 2 cores × cross-section. Mutual capacitance is a design maximum. Insulation resistance at 20 °C ≥ 1 000 MΩ·km. Min. bend radius = 6 × maximum outer diameter, static. Max. pull force = 50 N/mm² × total copper cross-section. Other pair counts and 1.0 mm² versions on request.

08 Fire-resistant option, ordering code, marking and delivery

Fire-resistant (-FR) execution

Circuits that must keep operating during a fire (for example fire-pump power, smoke-extraction control and selected safety signals) can be supplied with a mica-tape circuit-integrity layer under the cross-linked insulation.

Parameter	Standard execution	-FR fire-resistant execution
Insulation system	XLPO, single layer	Glass-mica tape over conductor, then XLPO insulation
Circuit integrity	—	IEC 60331 series; duration class (for example 90 or 180 min) as specified by the project
Flame propagation	IEC 60332-3-24 (category C), IEEE 383	IEC 60332-3-24 (category C), IEEE 383
Halogen-free, low smoke	Yes	Yes
Outer diameter, mass	As tables, pages 7 and 8	Approx. +1.0 to +1.5 mm; mass approx. +6 to +10 %; confirmed at quotation

Ordering code

```
FC-NPP-P · 3×95 mm² · 0.6/1 kV · R3 · FR
```

Reads: FC-NPP power cable, 3 cores of 95 mm², 0.6/1 kV, radiation class R3, fire-resistant execution.

Item	Options
Series	FC-NPP-P (power), FC-NPP-C (control), FC-NPP-I (instrumentation)
Construction	Cores × cross-section in mm² (see article numbers, pages 7 and 8)
Radiation class	R1 (0.2 MGy), R2 (0.5 MGy), R3 (1.0 MGy), R-X (> 1.0 MGy, on request)
Option	-FR fire-resistant; sheath colour for separation train; earth core (control cables)
Length	Continuous lengths without joints, on steel reels, as ordered
Documentation	Test certificate per reel; qualification documents and third-party witness by agreement

Sheath marking

```
FEICHUN FC-NPP-P 3×95 mm² 0.6/1 kV R3 HFFR
[year] [serial no.] [metre mark]
```

Durable marking is repeated along the cable at regular intervals of about 1 m.

Packing and delivery

Item	Standard
Reels	Steel or fumigated wooden reels; cable ends sealed with heat-shrink caps
Reel label	Type, cross-section, length, gross/net mass, batch no., reel no.
Lead time	Quoted per project; typically 8–12 weeks after technical approval for standard sizes
Warranty	Per contract; standard not less than 3 years against manufacturing defects

09 Installation, quality assurance and FAQ

Installation guidelines

- Keep to the minimum static bending radius: 8 × D (FC-NPP-P), 6 × D (FC-NPP-C, FC-NPP-I). Use 12 × D while pulling.
- Install at cable temperature of −10 °C or above.
- Pull with a pulling eye on the conductors, at 50 N/mm² of total copper at most; use rollers and avoid sharp edges.
- Keep redundant safety trains separated as required by the plant design (IEC 60709, IEEE 384).
- Respect tray fill and spacing so that the ampacity assumptions remain valid.
- Terminate screens and drain wires according to the plant earthing and EMC scheme.
- Test insulation resistance after installation per the plant commissioning procedure.
- Store reels on flat, dry ground away from solvents and direct sun; keep end caps in place.

Quality assurance

Each lot is manufactured with documented material and process records, so that every reel can be traced back to raw-material batches. Hold points and witness inspection by the purchaser or a third party can be arranged.

Level	Tests
Routine (every reel)	Conductor resistance, voltage test 3.5 kV AC (2.0 kV for FC-NPP-I), dimensions and marking check
Sample (every lot)	Tensile strength and elongation, hot-set test, insulation and sheath thickness, halogen content and smoke, oxygen index
Type (per design)	Flame propagation, halogen and smoke tests, thermal ageing and radiation-ageing programme

Frequently asked questions

What is a radiation-resistant cable for nuclear power plants?

It is a cable whose insulation and sheath keep their electrical and mechanical properties after long exposure to ionising radiation, heat and humidity. FC-NPP cables use electron-beam cross-linked halogen-free polyolefin compounds for this purpose.

Why are nuclear cables halogen-free?

Halogenated polymers such as PVC release corrosive acid gases when burned or irradiated. Halogen-free cables protect safety instrumentation, equipment and personnel, and give lower smoke density in a fire.

What do Class 1E and LOCA mean?

Class 1E identifies safety-related electrical equipment needed for safe shutdown and accident mitigation. LOCA is a loss-of-coolant accident, with steam, pressure and chemical spray. Class 1E cables inside containment must be qualified for these conditions.

Which radiation class should I choose?

Choose the class that equals or exceeds the total integrated dose on the cable route (normal 40-year dose plus accident dose) given in the plant dose map.

What information is needed for a quotation?

Plant and project name, plant area and dose, series and cross-section, quantity and length per reel, radiation class, fire-resistance requirement, qualification standard and delivery schedule.

10 Standards, certification, notices and contacts

Reference standards

Standard	Subject
IEC 60228	Conductors of insulated cables, class 2
IEC 60502-1	Power cables up to 1 kV, construction reference
IEC 60544 series	Effects of ionizing radiation on insulating materials
IEC 60780-323 / IEEE 323	Qualification of electric equipment important to safety
IEEE 383	Type test of Class 1E electric cables, field splices and connections
IEC 60332-1-2, IEC 60332-3-24	Flame propagation, single and bunched cables
IEC 60754-1 / -2	Halogen acid gas content and gas acidity
IEC 61034-2	Smoke density measurement
IEC 60331 series	Circuit integrity under fire
IEC 60709 / IEEE 384	Separation of safety circuits

Quality and approvals

CE, EAC and UKCA documentation

FeiChun holds conformity documentation for selected low-voltage cable ranges. Certificates are supplied on request.

ATEX, IECEx and VDE approvals

Held for defined product groups. Not part of the FC-NPP series unless stated in the quotation.

Nuclear qualification

Qualification scope and test reports for the FC-NPP series are confirmed per project at the quotation stage.

Notice and intellectual property

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