SUPPLY CHAIN MANAGEMENT

THIRUVANANTHAPURAM

SPECIFICATION

33 kV BUS & LINE ISOLATORS WITH STRUCTURE

APPLICABLE TO KSEBL	**Rev#0**	DOC. NO.: **SCM-SPEC/XM/33kV Isolators**
		EFF. DATE: **31/03/2021**

Number of Pages: 21

Technical Specification and Evaluation Committee for Transmission Material

(i) Document Approval & Control Status

	Compiled by	Verified by	Approved by
Name	**Smt.Sindhu.P**	**Smt.Geetha.M**	**Mr. Sanal Kumar K**
Position	Assistant Executive Engineer (Supply Chain Management)	Executive Engineer (Supply Chain Management)	Chief Engineer (Supply Chain Management)
Date	31/03/2021	08/04/21	08/04/21
Signature	Sd/-	Sd/-	Sd/-

(ii) Amendments and History

Sec. #	*Rev. #*	*Date*	*History of Change*

1. PURPOSE:

Purpose of this document is to document updates & history, upkeep and publish the specifications related to **33kV Bus & Line Isolators with Structure** in a professional manner

2. SCOPE:

The Scope of this document is to inform and alert all relevant stakeholders including KSEBL. Public, KSERC etc regarding the current specifications and historical changes adopted in specifications of **33kV Bus & Line Isolators with Structure** used in field by KSEBL

3. RESPONSIBILITY :

The Executive Engineer (M), Office of Chief Engineer, Supply Chain Management shall compile and take necessary steps to publish the specification in KSEBL website and shall inform relevant stakeholders regarding updates and revisions

4. PROCEDURE FOR REVISION:

Modifications if any, in the technical specification will be incorporated as **Revisions.** Any changes in values, minor corrections in pages, incorporation of small details etc. will be considered as Minor Modification. **The Revisions due to minor modifications will be assigned as Rev. No.0.1, 0.2 etc.**

A complete updation of the technical specification will be considered as Major modification. **The Revisions due to major modifications will be assigned as Rev. No.1.0, 2.0 etc.**

All the details of regarding the revisions (both minor and major) will be incorporated in **"(ii)-Amendments and history"** above.

The concerned officers, in consultation with the Technical Committee will review and suggest changes required and the revision suggestion will be approved by **Chief Engineer (SCM).** Those who notice any discrepancy or have any suggestion regarding revision, may bring the matter to the attention of Chief Engineer (SCM) in writing or through e-mail id:**cescm@kseb.in**

CONTENTS

1) Scope 5
2) Climatic Conditions 5
3) Particulars of the System 5
4) Standards 6
5) Type and Rating 6
6) Temperature Rise 6
7) Isolator Insulation 7
8) Blades & Fixed Contacts 7
9) Arcing Horn and Arcing Contacts 8
10) Connectors 8
11) Operating Mechanism 8
12) Earth Switches 9
13) Manual Operating Mechanism 9
14) Auxilary Switches 9
15) Interlocks 9
16) Bearing 9
17) Supporting Structures 10
18) Design Materials and Workmanship 10
19) Cable Boxes 10
20) Drawing and literature 10
21) Test 11
22) Marking 13
23) Inspection 13
24) GUARANTEED TECHNICAL PARTICULARS (33KV LINE & BUS ISOLATORS) 14

TECHNICAL SPECIFICATIONS OF 33KV BUS & LINE ISOLATORS

1) **Scope:-** This specification provides for design, manufacture, testing at manufacturer's works and delivery of outdoor station type 33kV (local, manual operating mechanism) isolators with/without earthing blades and complete in all respects with solid core insulators, metallic connectors, arcing horns, arcing contacts, operating mechanisms, interlocks, auxiliary switches, indicating devices, fixing details etc as described herein.

The supporting structure for 33kV isolators is also part of the scope of this specification. The power and control cables for the interlocking and remote position indication of the isolators and earth switches are not covered by this specification.

2) **Climatic Conditions:-** The equipment supplied under this specification shall be suitable for satisfactory operation under the following tropical humid conditions:

Maximum temperature under hot sun	:	50^0C
Maximum temperature of air in shade	:	40^OC
Minimum temperature of air in shade	:	15^0C
Maximum relative humidity	:	100%
Average number of thunderstorm days Per annum	:	50%
Average number of dust days per annum	:	5
Average number of rainy days per annum	:	90
Average annual rainfall	:	3000 mm
Number of months during which tropical		
Monsoon conditions prevail	:	5
Maximum wind pressure	:	100kg/sq. Metre
Altitude above M.S.L not exceeding	:	1000 m

3) **Particulars of the System:-** The isolators to be procured under this specification are intended to be used on 3 phase, A.C 50 cycles, and effectively grounded system. The nominal system voltage is 33kV. The rated short time withstand current shall be 25KA for 33kV isolators. For position indication of line isolators and bus isolators on the indoor control panel and for electrical interlocking of isolators with circuit breakers and other associated equipments, auxiliary supply will be available at 110 Volts D.C from the station battery.

4) **Standards:-** The isolators shall comply in all respects with IS.9921 or IEC publication No.129. Equipment meeting any other authoritative standard, which ensures an equal or better quality than the standard mentioned above will also be accepted.

5) **Type and Rating:-** All isolators with/ without earth switches shall operate through 90^0 from their fully closed position to fully open position so that the break is distinct and clearly visible from the ground level. 33kV isolators shall be double break as detailed below.

Double break type having three posts per phase, triple pole, single throw outdoor type rotating centre post, silver plated contacts, with horizontally operating blade and insulator posts arranged vertically. The isolators shall be gang operated as indicated in the schedule of requirement.

The equipment shall be designed for a normal current rating of 800A for continuous service at the system voltage specified herein. The isolators are not required to operate under load but they must be called upon to handle magnetization currents of the power transformers and capacitive currents of bushings, bus bars, connections, very short length of cables and currents of voltage transformers and dividers. The isolators are required to be used in electrically exposed installations and this should be taken into account while fixing the clearance between phase and earth.

The rated insulation strength of the equipment shall not be lower than the levels specified below:

Standard declared voltage kV(rms)	Rated voltage of the isolator kV (rms)	One minute power frequency withstand voltage kV (rms)		Standard impulse withstand voltage positive polarity kV (Peak)	
		Across the isolating distance	To earth and between poles	Across the isolating distance	To earth and between poles
33	36	195	170	80	70
11	12	85	75	32	28

6) **Temperature Rise:-** In view of the severe climatic conditions at site, the reference ambient temperature is to be taken as 50^0C. The temperature rise for the various parts shall be adjusted accordingly as specified in IS.9921 and I.E.C publication No. 129.

7) Isolator Insulation:-

i) Insulation to ground, insulation between open contacts and the insulation between phase of the completely assembled isolator switch shall be capable of withstanding the dielectric test voltage specified in clause 5 above. Insulation between open contacts of a pole shall at least be 15% more than the insulation between the live parts of a pole to ground so that any flash over occurs when switch is open, it shall be to the ground.

ii) The solid core post insulators shall have an ultimate bending strength of 6KN and shall conform to IS.2544 & IEC.168 or other internationally recognized standards. The insulators selected shall be for use at normally polluted atmosphere creepage distance of 25mm/kV min. and shall be specifically suited to meet the mm/kV particular requirements of ultimate torsional strength and cantilever loads which they will be called upon to resist during service the rated voltages.

iii) The porcelain shall be homogeneous and free from all cavities and flaws. Design of the insulators shall ensure ample insulation, mechanical strength and rigidity for satisfactory operation under site conditions. The design shall also ensure that the losses caused by capacitive currents or conduction through dielectric are minimum and that the leakage due to moist and dirty insulator surface is least.

iv) All metal caps and supports shall be cemented to the porcelains where as the blades and contact blocks shall be bolted on the metal parts of insulator thus making the replacement of damaged insulator easy.

8) Blades & Fixed Contacts:- All isolators shall have heavy duty, self aligning and high pressure line type fixed contacts of modern design and made of hard drawn electrolytic copper. The various parts should be accordingly finished to ensure interchangeability of similar components. The switch blades forming the moving contacts shall be made from tubular section of hard drawn electrolytic copper having suitable diameter and thickness. These contacts shall be liberally dimensioned so as to withstand safely the highest short-circuit currents and over voltages that may be encountered during service. The surfaces of the contact shall be rendered smooth and silver-plated. In nut-shell the male and female contact assemblies shall be of substantial construction, and design of their assemblies shall ensure.

i) Electrodynamics withstand ability during short circuits without any risk of repulsion of contacts.

ii) Thermal withstand ability during short circuits.

iii) Constant contact pressure 10 kg even when the live parts of the insulator stacks are subject to tensile stresses due to linear expansion of connected bus bar or flexible conductors either because of temperature, variation of strong winds.

iv) Wiping action during closing and opening.

v) Self-alignment assuring closing of the switch without minute adjustments. The moving contacts for triple pole isolators shall be gang operated.

The earthing switches shall each be provided with suitable type of fixed contacts below the fixed contact assemblies of the main switch on the incoming supply side and of moving contacts. These contacts too shall be fabricated out of hard drawn electrolytic copper and dimensioned to withstand the currents on the line. The moving contacts for triple pole isolators shall be gang operated.

9) Arcing Horn and Arcing Contacts:- Adjustable arcing horns which are required for the purpose of arc reduction are to be provided. Adjustable arcing horns which are required for the purpose of insulation co-ordination are also to be provided if required. The details thereof should be given in the tender. The bidder shall supply the graph showing impulse and power frequency spark over voltage for various gap settings of the arcing horns. Male Arcing Horn and female Arcing Horn are of diameter 10 mm for all types of isolators.

10) Connectors:- Each isolator shall be provided with appropriate number of bimetallic clamping type of connectors suitable for ACSR Wolf with 250mm spacing in between for 33kV Isolators. The maximum length of the jumper that may be safely connected or any special instructions considered necessary to avoid undue loads on the post insulators should be stated by the bidders in their offers. The connectors shall be of heavy-duty type with zinc passivated bolts, nut and washers 12mm dia or above and adequate contact area shall be provided with the fixing end of the isolators.

11) Operating Mechanism:- All isolators shall have separate local manual operation. They should be provided with ON AND OFF indicators and padlocking arrangements for locking in both the end positions to avoid un-intentional operation.

The isolators inclusive of their operating mechanism, should be such that they cannot come out of their open or closed positions by gravity, wind pressure, vibrations, shock etc. Isolators and earth switches should be capable of resisting in closed position, the dynamic and thermal effect of maximum possible short circuit currents specified. The operating mechanism should be of robust construction, easy to operate by a person and conveniently located for local operation in the switch yard.

12) **Earth Switches:-** Line earth switches shall consist of three links per isolator, which will normally rest against the frame when the connected isolator is in closed position. Each Earth switch shall be mechanically interlocked with the connected isolating switch so that it is possible to close and open the Earth Switch only when the connected isolating switch is in the open and close positions respectively. Each earthing switch shall be designed to withstand electro-dynamic stress due to currents upto 50KA (peak) as per IEC recommendations.

13) **Manual Operating Mechanism:-** The manual operating mechanism shall be of robust construction, conveniently located for operation and easily operable by a single person. The length of the operating rod will be such that the height of the manual-operating handle above ground is from 1000 mm to 1300mm. The operating rod of earthing switch shall have insulated handle so that the electrostatic voltage on the handle from bus bar may not cause shock to the operator. The isolators shall be so constructed that the switchblades will not fall to the closed position if the operating shaft gets disconnected.

14) **Auxilary Switches:-** All isolators and earthing switches shall be provided with 110 Volts DC auxiliary switches for their remote position indication on the control board and for electrical interlocking with other equipment. Eight pairs of normally open and eight pairs of normally closed contact each for the main switches shall be provided. All contacts should be brought out on terminals. Provision shall be kept for adding more auxiliary switch contacts at a later date. Separate auxiliary switches shall be provided for isolating/earth switches. The auxiliary switches shall be of robust construction and housed in weatherproof and dust tight covers mounted on the respective operating mechanism. Auxiliary Box, auxiliary contacts, terminals, electrical interlocking mechanism etc. are the components of isolator which give frequent trouble. Durability, quality and workmanship of the above materials shall be ensured in the construction of isolators and this shall be subject to stringent quality check before supply. It shall be possible to change normally closed contact into normally open contracts and vice versa at site.

15) **Interlocks:-** For the purpose of making the operation of the isolator dependent upon the position of the associated circuit breaker or other equipment as may be required at site, suitable electrical interlocks should be provided on each isolator. The interlocks should be of robust design and contained in a weather proof and dust tight housing. Besides the electrical interlocks the earthing switches shall be provided with mechanically operated interlock also. Alignment of every component shall be of perfect design and construction.

16) **Bearing:-** The design and construction of the various bearings shall embody all the features required to withstand climatic conditions specified, so as to ensure dependable and effective operation even after long period in action of these isolators and switches. All bearings in the current path, except those specially designed as high-pressure contacts, should be shunted with

flexible copper conductors of adequate cross section. Bearing housings should be weather proof. Facilities should be provided for lubrication of the bearing. All bearing shall be filled with first filling of grease and provided with nipples for servicing.

17) Supporting Structures:- All the isolators shall be suitable for being mounted on galvanized steel supporting structures preferably on Tubular column (minimum 114mm dia.) and base plate 300 x 300 x 9mm with suitable base channel & earthing Pad etc. in upright support position with ASTM standard. Galvanizing confirming to Cl.No.9.11 of IS 2544 and Cl.No.5.7 of IEC 168.

The minimum clearance in air for isolators shall be as follows:

			33kV
i)	Between phases (center to center)	-	1500mm
ii)	Between live parts & earth (min)	-	510 mm

The height of structure above ground level shall be such as to provide a working clearance of 2.8 meters. The line terminal of the equipment shall be approximately 4m & 3.7m above ground level for 33kV Isolators.

18) Design Materials and Workmanship:- The supplier shall assume full responsibility for co-ordination and adequate design. All materials used in the construction of the equipment shall be of the appropriate class, well finished and of approved design and make. All similar parts should be accurately finished and interchangeable.

All ferrous parts shall be heavily hot dip galvanized. Bolts, nuts, pins and washers, etc used on the isolators shall also be galvanized. Special attention shall be paid to give tropical treatment to all the equipments, as they will be subjected during service to extremely severe exposure to atmospheric moisture and to long period of high ambient temperature. All current carrying parts shall be non-ferrous metal or alloys and shall be designed to limit sharp point edges and similar sharp faces.

19) Cable Boxes:- Cable boxes including cable glands for terminating multi core cables shall be provided wherever required. The supply includes necessary connecting materials for mounting of cables boxes on the isolating structures. Mounting of cable boxes shall be in accessible position, clear from the floor level to make the jointing work easy. The size of power cable will be 300 sq.mm and that of the control cable 2.5sq. mm. Provisions for 3 Nos. each 12 core, 7 core and 2 core cable entry shall be provided. Unused cable glands shall have blanking plates. Boxes shall be made of corrosion free material suitably painted with seven tank process / powder coated or fully galvanized with IP55 above protection.

20) Drawing and literature:- The following drawings shall be furnished.

i) The drawing showing the outline dimensions of the isolating and Earth switches.

ii) Drawing showing the details of main contact.

iii) Drawing showing the mechanical interlocks between Earth and Isolating switches

iv) Drawing showing the electrical connections of the control circuit.

v) Drawing showing equipment of electrical interlock.

vi) A graph showing impulse and frequency spark over value for various gap settings of arcing horns.

vii) Drawing for mounting structures for 33KV isolators.

viii) Drawing for solid core insulators (specify the make).

21) **Test:**- Each isolator shall strictly comply with the requirements and shall be subjected to all routine tests stipulated in the relevant standard. All tests shall be made prior to despatch in the presence of the representative of the purchaser by the successful bidder if so desired by the purchaser.

The isolators and Isolator-cum-Earthswitch shall be subject to various type tests routine and acceptance test as per IS:9921-1985 (as amended upto date) and IEC:60129 (as amended upto date)

i) **Type Tests:-** All the Isolators, earthing switch along with **Insulators and Structure** offered shall be fully tested for following type tests, at ERDA/ CPRI or Govt. NABL accredited laboratory. The Bidder shall furnish the type test reports for the Isolators of the type and Design offered by him along with the offer.

Following Type test reports shall be submitted.

i) Lightning Impulse Voltage withstand test

ii) Power Frequency Voltage withstand test on main circuit.

iii) Power Frequency Voltage withstand test on auxiliary circuit

iv) Temperature rise test on main isolator

v) Short Time Current & peak withstand current test on isolator and earthing switch.

vi) Short Circuit making performance test of earthing switch

vii) Operating and mechanical endurance test on isolator and earthing switch

viii) STC test on terminal connector

ix) Degree of protection test on cubicle

x) Mech& Elect Endurance test on Auxiliary switch

xi) Galvanizing test

xii) Tests on insulator (Dielectric and mechanical load tests)

Make / Type test report of insulators should be provided.

1) 1.2/50 microsecond lightning impulse voltage withstand test.
2) 50% impulse voltage flashover test.
3) PF voltage withstand test (Dry& Wet)
4) Visible discharge test
5) Porosity test
6) Mechanical strength test.
7) RIV test
8) Visual inspection & Dimension test.

xiii) Dielectric tests on insulating sleeve provided on operating handle**.**

However the purchaser reserves the right to demand repetition of some or all the type tests in the presence of purchaser's representative.

Routine / Acceptance tests:- For isolator/earthing switch to be supplied with structure, all the aceptance tests shall be performed on offered structure only. For isolator/earthing switch to be supplied without structure, all the acceptance tests shall be performed on dummy structure. All the acceptance tests shall be as per relevant standard and shall be furnished. Also, all routine tests/ acceptance tests shall be performed by the successful bidder in the presence of purchaser's representative.

ii) The following Routine / Acceptance tests shall be carried out as per IS:9921 of 1982 on **complete** isolators and isolators-cum-earthing switches along with insulators.

i) Power frequency voltage dry withstand test on main circuit with offered insulators

ii) Voltage tests on control and auxiliary circuits.

iii) Measurement of resistance of main circuit.

iv) Mechanical operation test on isolator and earthing switch (50 operating cycles at rated auxiliary supply or hand operated & 10 operating cycles each at maximum and minimum auxiliary supply) on selected one sample out of every offered lot.

v) Temperature rise test at rated current on one selected sample out of every offered lot.

vi) List of additional tests on insulator

1) Bending load test in four direction of 50% min bending load guaranteed on all insulators as routine test.

2) Bending load test in four directions at 100% of min bending load guaranteed as special test on sample of insulator selected from each lot.

3) Tensional test on sample of insulator selected from each lot.

22) Marking:-

a) Isolators and their operating device shall be provided with the nameplates in accordance with the Table 1 of IS.9921 /1985 (Part 5). The name plates shall be weather proof and corrosion proof.

b) The name plate should be fitted in a position where it can be visible in normal service and installation.

c) The isolators may also be marked with the ISI Certification mark, if any.

23) Inspection:- All routine tests and inspection shall be made at the works of successful bidder unless otherwise especially agreed upon by the manufacturer and purchaser at the time of purchase.

23.1. Inspection may be carried out by the purchaser at any stage of manufacture. The supplier shall grant free access to the purchaser's representative at a reasonable time when the work is in progress. Inspection and acceptance of any material under this specification by the purchaser shall not relieve the supplier of his obligation of furnishing materials in accordance with the specification and shall not prevent subsequent rejection, if the material is found to be defective.

The supplier shall keep the purchaser informed in advance about the manufacturing programme so that arrangement can be made for inspection. The purchaser reserves the right to insist for advance intimation. The supplier shall give 20 days to enable the purchaser to depute his representative for witnessing the acceptance and routine tests.

23.2. The purchaser has the right to have the tests carried out at the supplier's cost by an independent agency wherever there is a dispute regarding the quality of supply.

Sd/-

CHIEF ENGINEER (SCM)

GUARANTEED TECHNICAL PARTICULARS FOR 33kV 800A BUS/LINE ISOLATORS

Sl No	Particulars	Guaranteed Values	
		Bus Isolator	Line Isolators
1	Type, make and country of origin.		
2	Maximum permissible continuous service voltage (KV)		
3	Details of operating mechanism.		
4	Clearance in air (Minimum)		
i)	Between Phases (mm)		
ii)	Between parts and earth(mm)		
iii)	Distance between centers of outer stacks of insulators (mm)		
5	Power frequency withstand test voltage for completely assembled switches.		
	a) Against ground.		
	i) Dry KV (rms):		
	ii) Wet KV (rms)		
	b) Across open contacts:		
	i) Dry KV (rms)		
	ii) Wet KV (rms):		

	c) Between Phases:		
	i) Dry KV (rms)		
	ii) Wet KV (rms):		
6	Impulse withstands test voltage of completely assembled switch without arcing horns with 1.2/50 micro second impulse voltage.		
a)	Against ground KV (Peak)		
b)	Across the open ends of the same phase KV (Peak)		
c)	Between phases KV (Peak)		
7	100% impulse flashover voltage of completely assembled switch with arcing horns with 1.2/50 micro second impulse wave against ground (KV Peak)		
8	Particulars of the main contacts i.e. fixed contacts (Main Switch, earthing switch)and moving contact (Main switch and Earthing Switch)	**Main Switch**	**Earth Switch**
a)	Type		
	i) Fixed Contacts		
	ii) Moving Contacts		
b)	Material (give full dimensions of the fixed and moving contacts)		

	i) Fixed Contacts	
	ii) Moving Contacts	
c)	Surface treatment and thickness of surface coating.	
d)	Contact area.	
e)	Contact pressure.	
9	Current density at the minimum cross section of switch blade Amp./Sq.mm.	
10	Continuous current rating Amp.	
11	Short time current rating:	
	i) For 1 second KA (rms)	
	ii) For 2 seconds KA (rms)	
12	Rated peak short circuit current KA(Peak)	
13	Rated peak short circuit current of earthing blade KA(Peak	
14	Momentary current KA.	
15	Temperature rise corresponding to:	
a)	Maximum continuous current rating and $50^{o}C$ ambient temperature (^{o}C)	

b)	Short time current rating	
	i) For One second (^{O}C)	
	ii) For Three second (^{O}C)	
16	Maximum transformer magnetizing breaking current which can be safely interrupted by the switch	
17	Maximum current that can be safely interrupted by the switch.	
18	Maximum current that can be safely interrupted between equipotential bus bar.	
19	Number of operations which the switch can withstand without deterioration of contacts.	
20	Number of times the switches can be operated without any need for inspection	
21	Auxiliary switches:	
a)	Number of normally open and normally closed contacts.	
b)	Rated voltage	
c)	Rated current	
d)	Test voltage.	
22	Phase to phase distance (mm)	
23	Type of mounting	

24	Number of break per phase	
25	Power required by DC inter locking coil at 110 Volts and its make (W)	
26	Safety factor taken into account while designing the isolator.	
27	Whether connectors provided and if so, indicate the type and material used.	
28	Whether adjustable gap type arcing horns provided and if so, the material used.	
29	Whether arcing contacts provided & if so give type and materials used.	
30	Whether separate operating mechanism provided for operation of main blade and earthing blade.	
31	Location and type of bearing	
32	Particulars of insulators.	
i)	Make	
ii)	Type	
iii)	Size Height (mm)	
iv)	(a) Ultimate bending strength:	
	(b) Compression strength	
	(c) Tensile strength	

	(d) Torsional strength	
v)	Weight (Kg.)	
vi)	Number of units per stack.	
vii)	Diameter of shed (mm)	
viii)	Height of stack (mm)	
ix)	Minimum nominal creepage distance (mm)	
x)	Dry arcing distance(mm)	
xi)	1 minute dry withstand voltage KV (rms)	
xii)	30 secs. Wet withstand voltage KV (rms)	
xiii)	Power frequency flashover voltage (KV rms)	
	a) DRY	
	b) WET	
xiv)	Impulse flashover voltage KV (Peak)	
xv)	Impulse withstand voltage KV (Peak)	
xvi)	Hissing voltage (at which audible discharge can be detected (KV)	
xvii)	Puncture voltage KV	
xviii)	Visible Discharge voltage.	

33	Weight of one three pole-isolating switch without earthing blade (kg.)	
34	Type of interlocking between isolating switch and earthing switch.	
35	Weight of operating mechanism.	
36	Test voltage of coil	
37	Tolerance permissible in the DC operating voltage.	
38	Opening time of isolating switch.	
39	Type of interlocks provided	
40	Actual Dimension of isolator	
41	Dimensions of base in mm	

SCHEDULE OF GUARANTEED TECHNICAL PARTICULARS FOR SUPPORTING STRUCTURES

Sl. No.	Particulars	Guaranteed Values	
		33kV	
		Bus Isolator	Line Isolator
1)	Mounting details		
2)	Over all dimensions		
3)	Weight of Supporting Structure		
4)	Thickness of Galvanizing of Supporting Structure		
5)	Additional information, if any.		