

Lightning Protection Checklist

Site Name:

Date: / /

Check List	Comply	Needed	Comment
	Yes/No	Yes/No	
1. Structural Protection			
Define type of building I, Ia, II, IIa, III, IIIa			
<ul style="list-style-type: none"> • For Type I are all cladding and roofing sheets bonded and earthed to structural earthing system? • For Type II are steel frames bonded to roof sheets and structural earth? Auxiliary protection in accordance with rolling sphere design? • For Type III are air terminals in accordance with rolling sphere design? • Is lightning stroke counter fitted? 			
2. Antenna Structures - towers and masts			
Is there a communications tower present?			
<ul style="list-style-type: none"> • Is a lightning finial fitted above the highest antenna? • Is a finial and down conductors on each leg fitted to wooden towers? • Do HF antennas have spark gaps fitted? • Are finials fitted to HF masts? 			
Are there rooftop antennas?			
<ul style="list-style-type: none"> • Are the rooftop antennas bonded to the building lightning protection? 			

<ul style="list-style-type: none"> • Are spare antennas available? • Are masts and catenary wire protection an option? 			
3. Earthing and Bonding			
Is there a station earth?			
<ul style="list-style-type: none"> • Are there sufficient down conductors terminating on the earthing system? • Does the earth run around the perimeter of the building? • Is the earth resistance less than 5 ohms? • Is the perimeter earth bonded to the mains (PUB) earth and other earthing systems? • Are earth clamps in use if direct bonding is insufficient? 			
Is there a communications tower?			
<ul style="list-style-type: none"> • Are the legs of the tower earthed? • Is the tower earth less than 10 ohms? • Is the tower bonded to the perimeter earth? 			

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4. Surge Protection for Power Distribution			
Does the site have diesel backup?			
<ul style="list-style-type: none"> • Are MOV type redundant segment surge diverters installed on the incoming mains? • Is the surge rating sufficient? 			

<ul style="list-style-type: none"> • Is the neutral treated as other conductors for surge protection? • Are the surge diverter connecting leads sufficiently short to be effective ($\leq 300\text{mm}$)? • Is the earth return of surge diverter connected directly to frame? 			
<p>Is surge protection fitted to the main switchboard?</p>			
<ul style="list-style-type: none"> • What is the rating of the incoming supply? • Is it single or three phase? • Is a power surge filter of sufficient rating (80KA per phase) fitted? • If no diesel backup and main switchboard is PUB point of entry is surge rating sufficient ($\geq 120\text{KA}$ per phase)? 			
<p>Is a separate distribution board allocated to external circuits?</p>			
<ul style="list-style-type: none"> • Are security lights installed? • Are perimeter lights installed? • Are alarm systems installed? • Are security cameras fitted? • Are there external powered antenna rotators? • Is there power fed to tower lighting? 			
<p>Does the external services DB have a power surge filter?</p>			
<ul style="list-style-type: none"> • Is a power surge filter of sufficient rating (80KA per phase) fitted? • If overhead cables are the surge filter of 120KA per phase rating? 			
<p>External services</p>			
<ul style="list-style-type: none"> • If necessary, are surge diverters fitted to individual lights? • Are power surge filters fitted to external alarm systems and security cameras? 			

<ul style="list-style-type: none"> • Are power surge filters fitted to external antenna rotators? • Are diverters (40kA) fitted to base of towers and masts with lighting? 			
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5. Surge Protection for RF Cables			
Are waveguides and coaxial feeders used at the site?			
<ul style="list-style-type: none"> • Are cable sheaths and waveguides bonded at the point they leave the tower? • Are cable sheaths and waveguides bonded at the point they enter the building? • Are surge arresters fitted to coaxial feeders at point of entry and earthed satisfactorily? • Do rooftop antennas have surge arresters fitted to protect cables from a direct strike to the antenna? • Are spark gaps fitted to high power transmitters, HF transmitter baluns and coaxial feeders at HF antenna bases? 			
6. Surge Protection for telephone / data cables			
Is a telephone system installed in the building?			
<ul style="list-style-type: none"> • Is the MDF earthed to the station earth? • Are incoming exchange cables protected with multistage protectors? • Are external extensions protected? 			
Are control cables installed for antenna rotator, alarm, security, camera, motion detectors etc?			
<ul style="list-style-type: none"> • Are external control protected with multistage transient barriers? 			

<ul style="list-style-type: none"> • Are the transient barriers earthed to the station earth? 			
<p>Is there a computer network?</p>			
<ul style="list-style-type: none"> • Are the following protocols used and protected: • RS232 - DB9 and DB25 • RS485 • RS422 • Thin ethernet 10Base2 - BNC T connector • Thick ethernet 10Base5 - N type coaxial and DB15 AUI • UTP CAT5 - RJ45 hub and terminals 			

(Checklist courteous of Novaris Pty Ltd)