



**ELECTRICAL GEOPHYSICAL SAFETY:
DEVELOPING AUSTRALIAN GUIDELINES**
Ground Geophysical Surveys Safety Association



Presented on behalf of GGSSA by:
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THE EUREKA MOMENT
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WHAT IS GGSSA?



- Ground Geophysical Surveys Safety Association established in 2011 to advance safety in electrical geophysics
- The objectives of the GGSSA are:
 1. Promote the safe operation of ground geophysical surveys through
 - Development of guidelines
 - Facilitation of member training opportunities
 2. Expand GGSSA internationally

WHO IS GGSSA CURRENTLY?



- Foundation Member companies of the GGSSA
 - **CGG** Kathlene Oliver
 - **GPX Surveys** Katherine McKenna
 - **Search Exploration Services** Phil Palmer
 - **Zonge Engineering & Research Organisation** Kelly Keates
- Industry representative (2013) Theo Aravanis (RTX)
- Executive Committee positions to be renewed on a 18 - 36 month basis
- Technical Committee to be established Brett Rose
- ~35 interested parties



INITIAL FOCUS OF GGSSA



- Recent well publicised events within the industry has dictated the need to initially focus on electrical geophysical operations
- Raise the awareness of the dangers of electrical surveys
- Equipment and procedural requirements
- Introduce a common standard for auditing
- Driving and fatigue are serious issues and will be addressed by GGSSA

WHERE IS THE INDUSTRY EXPOSED?



- **Electrical geophysics**
 - Electrocution (including lightning)
 - Fire
- **Driving**
 - Mob/demob
 - On site
 - Towing
- **Fatigue**

BACKGROUND



NSW Government's main concerns with IP **were**

- Compliance with AS/NZS 3000 & AS3007
- Effective electrical isolation
- Touch and Step Potentials
- Transmitter cable joining & re-insulation
- Safe earth electrodes – the effect of soil layering & moisture
- Electrical Protection – transmitter and cables

ELECTRICAL GEOPHYSICS GUIDELINE SCOPE



- Provide guidelines for equipment and procedural requirements for electrical geophysical surveys
- Establish a nation-wide permitting system for operators and a method of auditing that permit system
- Provide an avenue for client companies to establish which operators are compliant with the guidelines

WORKFLOW

- Procedures
- Documentation
- Training
- Equipment
- Audit

PROCEDURES



- **General Safety**
- **Survey Design and Risk Analysis for Electrical Geophysics**
 - Electrical shock
 - Fire
- **Loop and Electrode Safety**
 - Roles and Responsibilities
 - Transmitter and Generator Location and Setup
 - Transmitter Operation
 - Refuelling
 - Connection to other equipment
- **Fuel Handling and Storage**
- **Communications**
- **Signage**

DOCUMENTATION



When planning for an electrical survey, the operator to consider the following list of documentation requirements as a minimum:

- **General**
 - Standard Operating Procedures
 - Emergency Response Plan
 - Material Safety Data Sheets
 - Electric Shock Protocol and Lightning Management Procedure
- **Project specific**
 - Risk Assessment
 - Emergency Response Plan
 - Location map with survey boundaries, co-ordinates and no-go areas

TRAINING



- The Active Member has overall responsibility to ensure that all its employees are trained and competent
- Examples of general training could include but are not limited to:

Induction	Supervisor and management
Work specific	Emergency procedures
First aid	Fire management
Vehicle operation	
- Training specific to electrical geophysics could include but are not limited to:

Electric Shock Protocol	Electrical Safe Operating Procedures
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EQUIPMENT



When planning for an electrical survey, the operator to consider the following list of equipment requirements as a minimum:

- Appropriate vehicles, safety equip. & spares
- Appropriate Communications Systems, both local and long distance
- Appropriate **survey equip. & spares**
- Appropriate First Aid kits
- Appropriate Fire Extinguishers
- Appropriate Signage
- Appropriate Spill Kit(s)
- Appropriate Bunding

AUDIT STRUCTURE



- **Internal**
 - A documented procedure to define the responsibilities, requirements for planning, conducting audits, establishing records and reporting results
 - Records of the audits and their results shall be maintained
 - Operator to conduct internal audits **every 6 months** (in discussion)
- **External**
 - Conducted 1st anniversary of compliance to these guidelines then **every 2 years**
 - External auditor needs to be an electrical engineer on the National Professional Engineers Register (NPER)


MEMBERS COMPLIANCE CHECKLIST



The contractor shall maintain the following documentation requirements to comply with their obligations under this membership

- Copies of licences and qualifications (company & individual)
- NPER certified SOP
- Training and assessment records
- Cable joining procedure
- Appropriate Insurance Coverage
- Tagging and isolation procedure
- WHS Statistics
- Radio terminology & procedure
- Signage register
- Fuel Storage & Handling procedure
- Maintenance records
- Preventative maintenance program
- Audit program
- Audit procedure
- Pre-start inspection checklists

ANNUAL MEMBERSHIP



	Active	Associate
Level 1	\$1,200	\$600
Level 2	\$500	\$250

- GGSSA Guidelines
- GGSSA Safety statistics
- GGSSA Certificate
- Noted on GGSSA website
- Use of GGSSA logo
- Event notifications
- List of NPER engineers

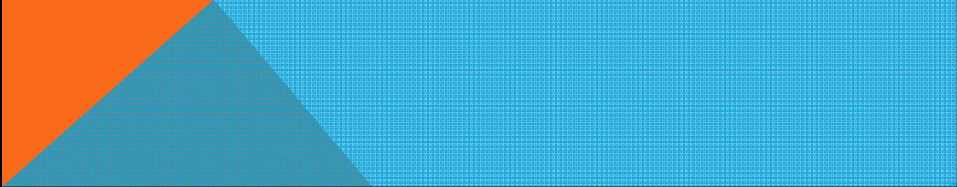
- Voting rights
- Can nominate for Technical Committee
- Minutes of the Technical Committee meetings

Active Commercial or industrial enterprises engaged in ground geophysics

Associate Exploration/Mining companies, Manufacturers, Consultants, Universities or Government Depts. with an interest in the objectives of GGSSA

Level 1 > 4 employees

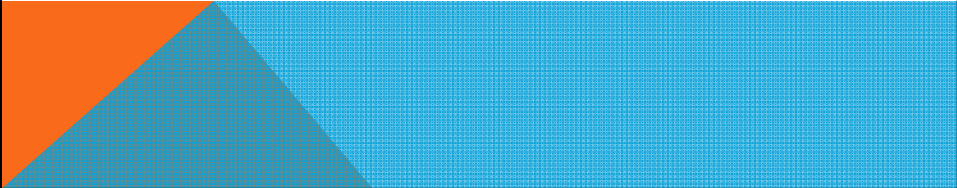
Level 2 1 - 4 employees



MEMBERSHIP RESPONSIBILITIES



- Uphold the Principles & Guidelines of the GGSSA
- Financial, i.e. Membership in good standing
- Submission of monthly WHS statistics lodged quarterly to an independent 3rd party



SPONSORSHIP



- Foundation members of GGSSA are concerned Australian electrical contractors volunteering their time on behalf of the industry
- In addition to Membership Dues, financial assistance in the form of sponsorship packages is required to:
 - a) Establish and run GGSSA
 - b) Keep membership costs reasonable
 - c) Employ an independent party to compile & process safety statistics

Annual fee	\$3,000+
Voting rights	2
Membership	1 years
Sponsor Logo	Prominently featured on GGSSA site
Other Benefits	Recognition on all GGSSA material

THANK YOU & QUESTIONS



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