# **Case Study - Northern Powergrid**

## Profile

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| Company Name: | Northern Powergrid |
| Business Sector: | Energy Distribution Network |
| Postal Address: | Lloyds Court, 78 Grey Street, Newcastle upon Tyne |
| Postcode: | NE1 6AF |
| Fleet Size Overall: | 2077 (2378 including private vehicles) |
| HCV: | 65 (including 4 x 4) |
| LCV: | 904 (including 4 x 4) |
| Mobile Plant & Machinery: | 290 (including tracked vehicles and quadricycles) |
| Company Cars: | 818 |
| Private vehicles used for business purposes: | 301 |

## Company Overview

**Northern Powergrid** is a wholly owned subsidiary of [MidAmerican Energy Holdings](http://www.midamerican.com/)**Company**and comprises:

* The electricity distribution business, operating through its subsidiary companies [Northern Electric Distribution Ltd (NEDL)](http://www.ce-electricuk.com/page/contact/nedl.cfm)and [Yorkshire Electricity Distribution plc (YEDL)](http://www.ce-electricuk.com/page/contact/yedl.cfm), which delivers electricity to customers in the North East of England, Yorkshire and northern Lincolnshire; and
* The subsidiaries [Integrated Utility Services (UK) and Integrated Utility Services (Ireland),](http://www.ce-electricuk.com/page/ius.cfm)which provide engineering resources, including strategic and technical design of electrical distribution systems, through to construction, installation and commissioning of assets for all system voltages up to 132kV.

## Nature of Operation and Driving Activities

**Electricity Distribution**

Working through the electricity distribution companies **NEDL** and **YEDL**, we operate and maintain the electricity distribution network that delivers electricity to more than 3.8 million premises.

Our role is to ensure a reliable, consistent and safe supply of electricity. Our area of operation covers 25,000 square kilometres, running from North Northumberland south to the Humber and northern Lincolnshire, and from the east coast to the Pennines.

**Northern Powergrid's** network consists of more than 31,000 substations, around 29,000 km of overhead line and 62,000 km of underground cable.

**Integrated Utility Services**

**Integrated Utility Services (IUS)** is dedicated to delivering excellent customer service in all aspects of design, construction, maintenance and operation of public and private utility networks.

From our base in the North East of England and with a network of offices and depots throughout the United Kingdom and the Republic of Ireland, we service a national network of clients. All have benefited from the expertise we have gained from over 50 years of experience in the industry and are supported by techniques and procedures developed and refined through our management of thousands of projects covering a complete scope of technologies and values.

**The Fleet**

The **Northern Powergrid** vehicle fleet travels approximately 13,000,000 miles per annum to deliver its services and has a variety of vehicles including cars, car-derived vans, medium goods vehicles, small, medium and large four-wheel drive vehicles (including Mobile Elevated Work Platforms), heavy commercial vehicles and specialist tracked vehicles.

**Road Risk Management Plan**

Driver risk assessment and training is a key deliverable of **Northern Powergrid's** wider Safety Improvement Plan which is being delivered in two phases:

* **Phase 1** of the **Northern Powergrid** Road Risk Management Programme aimed at the preliminary population of the company's at-work highest risk drivers is complete.
* **Phase 2** of the Programme is to include all other populations of at-work drivers, including occasional users.

**Northern Powergrid** has appointed a full-time Road Risk Manager.  A dedicated budget for the delivery of the road risk management programme has also been established.

## Organisational Structure

**Northern Powergrid** is formed of two different business areas, each area of which is also split into two.

* **Northern Electric Distribution Ltd (NEDL)** and**Yorkshire Electricity Distribution Ltd (YEDL)** construct and maintain the electricity distribution network throughout the north east of England and Yorkshire and the Humber region respectively. The extensive overhead and underground network allows energy to be supplied from the national grid to individual consumers.
* **Integrated Utility Services (UK) [IUS (UK)]** and **Integrated Utility Services (Ireland)** **[IUS (Ireland)]** are contracting companies that operate as subsidiaries of **Northern Powergrid**. They operate throughout the UK subcontracting not only to **Northern Powergrid**but also to other energy distribution network operators.

## Work related Road Safety Policy and Procedures

**Northern Powergrid** recognises the importance of occupational road risk and takes responsibility for its employees seriously.

Occupational Road Risk features prominently on the company's annual Safety Improvement Plan (SIP) which is reviewed on a weekly basis together with any safety related incidents.

As part of that plan, a full time Road Risk Manager was employed by the company in February 2009 with cross-company responsibility for occupational road risk. The Road Risk Manager, a former Roads Policing Inspector has so far been able to bring new ideas and perspectives to the occupational road risk arena and is supporting and coordinating the delivery of the Plan.

**Northern Powergrid** is presently undertaking a review of its road risk policy and a revised and updated edition of its Safe Driving Handbook is being produced. A copy of the handbook will be delivered to every employee together with an up-to-date version of the Highway Code.

Key to success of the policy and realisation of a reduction in vehicle accidents will be an effective and sustained emphasis on the following underlying areas of concern:

* Reversing and slow-speed manoeuvring;
* Travelling at speed and safe stopping;
* Defensive driving; and
* Concentration skills and avoiding distractions.

This will be achieved through a series of presentations and practical workshops designed to increase awareness of: vehicle blind spots; manoeuvring skills; driver reaction to hazards; concentration skills and driver distractions supplemented, where necessary, by intensive on-road training.

**Northern Powergrid** has recently embarked on a programme to roll out speed limiters for its van fleet and, although this has been done primarily on environmental grounds, there is recognition that there will also be some safety-related benefits.

## Work related Road Safety Guidance for Drivers

Work-Related Road Safety Guidance is to be found in Phase 1 of the Safe Driving Handbook which will be issued to drivers and reviewed each time they undertake an assessment. An up-to-date version of the Highway Code is to be issued with the Handbook.

The Handbook includes chapters on:

* Driving Licences & Driving Offences;
* Driving Standards;
* Legal Requirements;
* Maintenance and Servicing;
* Safe Driving;
* Training and Assessment;
* Health Issues; and
* Vehicle Accidents.

A series of occupational road risk presentations to all company drivers is to be delivered by the Road Risk Manager.  Specific road risk briefings are issued periodically and are where possible linked to the Government's **THINK!** campaign. Road risk is also a standing agenda item on the scheduled quarterly Safety Stand-Down Briefings.  Poster campaigns that target specific trends, activities or issues are also used when appropriate.

## Specific examples of procedures

**Northern Powergrid** introduced a 'Circle of Inspection' in 2008. The inspection, prompted by a magnetic disc affixed to the driver's door on exit from the vehicle, is intended to identify any obstructions or hazards that may impede the vehicle's exit from a parking space: in effect an assessment of the immediate journey. It should also be used as a visual safety check to ensure that the vehicle is safe and fit for the journey.

## Auditing and review

**Audit**

Upon appointment, the Road Risk Manager completed a comprehensive audit of the established road risk management plan; associated data sources and management arrangements. The results were published and presented to the road risk management programme's executive sponsors. Although the conclusions were broadly positive, the report included a number of recommendations for additional initiatives and revisions to priorities.

**Review**

The Road Risk Management Safety Improvement Plan is routinely reviewed:

* **Weekly** during a safety conference telephone call that includes Senior Managers and Heads of Department.
* **Two Weekly** by the Road Risk Manager and his immediate Management Team.
* **Quarterly** by Senior Management as part of the overall review of the wider Safety Improvement Plan.
* **Annually** the plan is reviewed and refined as necessary as part of the company's business-planning and goal-setting programme. The annual plan is endorsed by the executive management team.

Each of these reviews may result in adjustment of the detailed plan initiatives or priorities in response to identified adverse trends in road risk performance.

Every preventable vehicle accident (PVA) is centrally reported via a telephone hotline and investigated systematically to establish the root cause. Investigation outcomes are reviewed to allow any weaknesses or failings to be considered and rectified. The drivers involved are subject to both desktop and practical driving assessments to identify any training or development needs.

## Performance measures

A target for preventable vehicle accidents is established as part of **Northern Powergrid's** annual business planning and goal-setting process. Progress against this target is routinely monitored and widely reported through the weekly and monthly performance reporting regimes.

A wider range of performance measures will be established in support of Phase 2 of the road risk management programme, including monitoring progress with regards to risk assessment and training delivery to the at-work driver populations.

## Accident reduction

**Northern Powergrid** has seen a reduction in PVAs from 180 in 2001 to 36 in 2008 although part of this reduction was achieved through changes in recording and counting rules. The overall trend in the reduction of PVAs has reduced from 52 in 2004 to 36 in 2008.

A target of 26 or fewer preventable vehicle accidents was set for 2009. To the end of  August 2009, a total of 29 PVAs have been recorded, which includes a 48% increase in the number of off-road accidents. The vast majority of the road traffic incidents recorded fall into the low-speed manoeuvring and insufficient stopping distance categories.

As a consequence of this adverse performance, the Road Risk Management Plan has been formally reviewed in relation to identified best practices and a number of key programme initiatives have been brought forward.

## Financial and other benefits

The primary driver for the road risk management programme is **Northern Powergrid's** commitment to the safety and welfare of its employees and recognition that attitude towards the routine activity of driving at work is a litmus for an individual's wider attitude towards safety.

The financial benefits to be realised from a reduction in road traffic incidents is recognised and utilised to reinforce delivery of key programme initiatives and messages. The organisation uses broad cost bands to illustrate the consequences of road traffic incidents, particularly low level incidents resulting from low-speed manoeuvring and reversing, for which costs between £700 and £800 in bent metal alone are estimated. Hidden costs - such as lost production, missed deadlines and targets, investigation, additional administration, vehicle hire and damage to goods - are assumed to cost between £3,000 and £24,000 for each incident.

## Lessons learned

Arising from a formal review of the road risk management plan, the following key lessons learned have been drawn:

* The need to secure executive management commitment to the overall programme is imperative as is their personal support and compliance with individual initiatives.
* In order to be effective, all elements of the road risk management strategy must be delivered in a consistent and transparent manner through the regime of formal management reviews.
* Effective communication of road risk programme initiatives, procedures and new processes via management and supervisory structures as communication channels is essential.

## Current and future developments

Driver risk assessment and training remains a key deliverable in **Northern Powergrid**'s wider Safety Improvement Plan.  The successful completion of Phase 1 of the Road Risk Management Programme included provision of a desktop and in-car risk assessment for the at-work drivers **Northern Powergrid** identified to be at highest risk.
**Phase 2** of the programme is to include all other populations of at-work drivers, including occasional users.

**Risk Assessment and Training Framework**

The schematic below represents the framework to be utilised for categorisation and consequently prioritisation and processing of the at-work driver populations through the road risk assessment and relevant training module options.  The framework provides for fast-track progress, where necessary, of newly identified higher-risk drivers and those involved in preventable road traffic incidents.



Diagram 1 (Click for larger version)
Road Risk Management - Risk Assessment and Training Framework

**Road Risk Assessment and Training Modules**

A brief summary description of each of the modules of the programme is set out below:

**Driver Risk Categorisation**

To date, the analysis and categorisation of the company's at-work driver population has been completed utilising an in-house developed methodology that crudely identified a population of higher risk drivers. This population of higher risk drivers was the primary focus of Phase 1 of the programme.

Phase 2 is more inclusive, seeking to assess the remaining balance of the at-work driver population - a total of around 1,200 drivers. In order to establish priorities for this significantly larger group, it is necessary to complete a more formal assessment of the driver population risk exposure. External consultancy support utilising a proven methodology has been identified to deliver the appropriate categorisation and focus for delivery.

**Risk Assessment**

Risk Assessment is based on three packages:

**Desktop Risk Assessment Software**

An on-line driver risk assessment package integrated with desktop computer-based training package has been identified and is being procured. The product provides for assessment of driver hazard perception and attitude as well as testing knowledge of the highway-code.

The on-line risk assessment is to be available for completion by all at-work drivers at a time to suit them or in accordance with a defined schedule. The assessment must be completed in advance of undertaking any other assessment or training modules.  Alternatively, the desktop risk assessment may be completed as part of the rolling programme of Road Risk Road Show briefing sessions.

Risk assessment results of individual assessments will be reviewed by the Road Risk Manager to assist the analysis of trends and development of appropriate training modules.

**Intensive In-Car Risk Assessment**

By exception a facility will be available for a more intensive and extended period of in-car risk assessment for identified higher risk drivers. The in-car risk assessment module will usually be initiated on a fast-track basis on the recommendation of the Road Risk Manager following the driver's involvement in a vehicle accident.

**Reaction Response Test**

A test rig used in conjunction with a relevant vehicle, which tests a driver's reaction response times, has been procured. Software analyses the delay between the illumination of a set of simulated brake lights in front of the vehicle and the application of the vehicle's brake pedal. The reaction time is used to illustrate the impact of different speeds and stopping distances. In conjunction with a set of pre-spaced markers, the test can be completed within a depot location so that drivers can visually assess distances, thus providing a stimulus for discussion.

**Training**

The key training packages are summarised below:

**Desktop Training Software**

The on-line desktop-based driver risk assessment module integrated with the package of computer based training is configured appropriately in response to identified areas of risk concern or knowledge deficiency. The training package is to be available for completion immediately before or after completion of the on-line risk assessment with the optional facility to defer to a time more convenient to the individual.  A facility for tracking completion of the on-line training modules and monitoring performance is available to the Road Risk Manager.

**Modular Training Packages**

A series of modular training packages will be available to provide practical instruction and opportunities to practise skills in order to address areas of weakness identified by the on-line risk assessment and training.

These modular packages are designed for stand-alone delivery, although some drivers may benefit from receiving more than one module. It is anticipated that the modules will involve a combination of classroom and practical (in yard) content and have been designed for local delivery at the company's depot sites or other suitable facilities. The sessions are designed for half-day delivery with nominally between 8-12 candidates.  The preliminary range of modules will include the following:

* Reversing and slow-speed manoeuvring
* Travelling at speed and safe stopping
* Defensive driving
* Concentration skills and avoiding distractions
* Off-road training/ refresher

An extended full-day programme for inexperienced drivers, including the company's apprentice population, is also under development.

**Intensive In-Car Training**

By exception, a facility is available for intensive in-car training. It is anticipated that the full-day sessions, designed with a ratio of one tutor to one or two candidates, will be delivered as a combination of classroom and in-car instructor demonstration with periods of observed driver performance.

The intensive training module will be initiated on the recommendation of the Road Risk Manager for identified high-risk drivers or following a driver's involvement in a vehicle accident.

**Specialist Vehicle Training**

A complementary package of training modules is being developed for drivers of more specialist vehicles on the company's fleet.

**Skills for Life - Institute of Advanced Motorists**

As an alternative to the modular or intensive training packages, an option of providing a subsidy to staff electing to pursue the Skills for Life programme of driver training through the Institute of Advanced Motorists is being explored.

**Refresher**

A refresher programme of periodic on-line driver risk assessment and training will be established. Refresher training intervals shall be determined with consideration to a driver's level of assessed risk and driving performance with all drivers involved in a preventable vehicle accident processed through the fast-track facility.

**DVLA Licence Check Mandate**

**Northern Powergrid** will also be seeking employee consent to obtain driving licence information from DVLA.