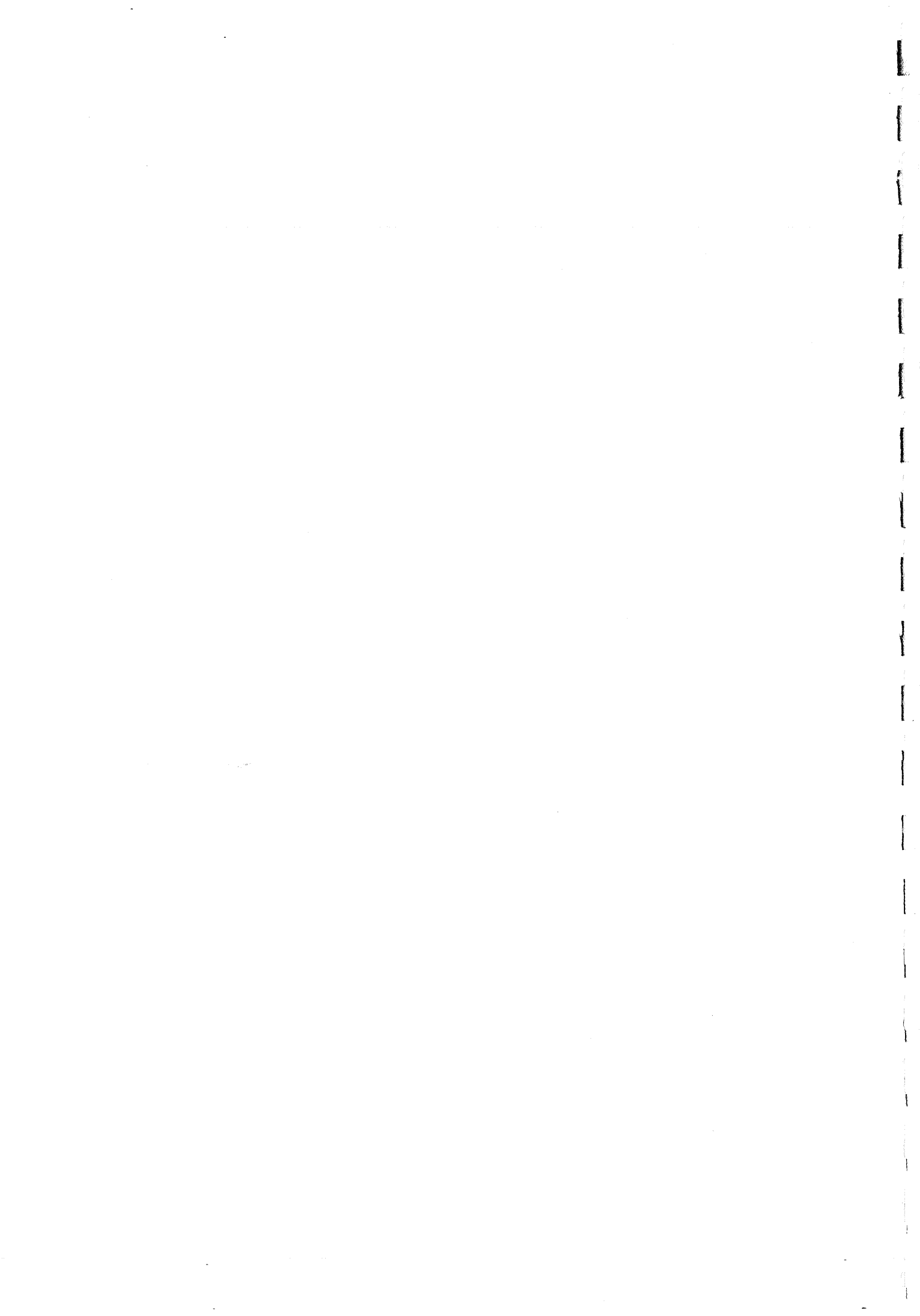


New certification Mark





***CERTIFICATION AND EX. MARK SCHEME
FOR EXPLOSION PROTECTED
ELECTRICAL EQUIPMENT***

BY

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BACKGROUND

There are several instances of Explosion Protected Electrical Equipment, more recently called *Hazardous Area Equipment* (HAE), being contributing factors in coal mining accidents/disasters. Sirius Creek, Kianga and Appin are more recent ones that spring to mind and, as a result, certain changes have taken place which have altered forever the way in which Explosion Protected Equipment used in hazardous areas has been authorised for use in underground coal mines.

Historically, one can now look at the past and hope those days never return. Until 1988 when (SIMTARS) began testing HAE equipment, the recognised method for electrical equipment to gain entry underground was the Department's Approval System under the signature of the Chief Inspector of Coal Mines. This system involved wading through a multitude of drawings (many from overseas without English translation); then, provided there appeared to be satisfactory evidence of compliance with New South Wales or an overseas testing station, their approval was recommended. There is little doubt that mistakes were inherent in this process. When SIMTARS came on line in 1988, the guess work was taken out of the Approval System; however this new system meant a Statement of Opinion or Test Certificate from SIMTARS, as well as an "Equipment Approval" by the Department. This system now

meant approvals were taking longer and this was an annoyance to both the manufacturer and to the operators of underground coal mines. Clearly a better system was needed to ensure the proper and more efficient management of HAE equipment.

It is fortunate that about this time there were several other organisations such as Standards Australia and the Australian Electrical and Electronic Manufacturers Association (AEEMA) thinking about the same issues and how change could be brought about for the benefit of Australian Manufacturing and Coal Mining Industry. The first meeting to be held for the express purpose of introducing a new scheme was at SIMTARS in 1988 with the following agenda items:

- (1) Certificates of Compliance instead of Approvals;
- (2) Reciprocal Testing Agreements with Overseas Testing Stations;
- (3) Recognition of Overseas Testing Stations;
- (4) Amalgamation of the HAE for Coal, Oil and Gas; and
- (5) Repair and Overhaul of HAE Equipment.

There is no doubt that since the first meeting in 1988 and the starting date of the New Certification Scheme on 1 July 1993, the Standards Australia Certification Management Committee, P8, has received assistance as a result of Mutual Recognition between States, Quality Based Systems, the formation of the Queensland Mining Industry Training Council (QMITC) and the Queensland Electrical and Electronic Industry Training Council (QEEITC).

THE CERTIFICATION PROCESS

As the certification process is now a reality with the majority of the decisions having been made, let us now examine the scheme.

Fundamentally, certification is a process by which a piece of HAE equipment is delivered by the manufacturer to a testing station and upon successful testing and the issue of a Certificate of Conformity is then delivered to the end user for immediate use.

Taking the above process one step further and in keeping with changing conditions, both nationally and internationally, a two-tier scheme has been introduced to comply with the following criteria:

- (1) The equipment, which conforms to one or more of the Australian or New Zealand explosion-protected electrical equipment Standards, will carry a Certificate of Conformity.
- (2) The certificate-holder, subject to appropriate quality assurance Standards being met, may apply for a licence to use the Australian Ex. Mark.

The Ex. Mark provides a service to industry and regulatory authorities by signifying that products, so marked, conform with the relevant Australian or New Zealand Standard. This service is granted to manufacturers and recognised by a certificate of conformance and proof of a quality system, certified to AS 3901 or AS 3902, or an equivalent national or international quality system Standard.

SCHEME ADMINISTRATION

At this point in time, it is appropriate that reference be made to the administration of the scheme, bearing in mind that many like-minded people have worked extremely hard against an entrenched system that did not see the need for change.

Change in the approval/accreditation area began with the New South Wales Department of Mineral Resources (DMR), the Queensland Department of Minerals and Energy (DME), SIMTARS and LOSC (Londonderry Occupational Safety Centre) and Standards Australia Committees P3 and EL23.

As ideas developed, it was felt that the scheme should be broadened to include the additional original agenda items such as overseas testing stations and reciprocity of testing stations.

At this point, AEEMA lobbied the Federal Government through the Department of Industry Training and Commerce (DITAC). The Federal Government responded positively and in line with its Overseas and Internal Mutual Recognition Program agreed to create a new self-funding body that would be responsible for overseeing that quality products were produced by both the external and internal trade markets.

This body was formed in 1992 and is known as the Joint Accreditation Scheme Australia and New Zealand (JAS-ANZ) and is responsible for accreditation of other quality bodies such as National Association of Testing Authorities (NATA), Standards Australia Quality Assurance Service (SAQAS) and testing stations such as SIMTARS should they require wider accreditation than is given by SAQAS.

BENEFITS OF ACCREDITATION

As can now be seen, the scheme has won acceptance from governments as well as the coal, oil and gas industry and at this stage the question must now arise as to what has been achieved and what are the benefits to the coal mining industry.

Firstly, in the past HAE equipment was approved by individual states and if the equipment was approved in one state then it had to be reapproved in other states. It was therefore not an isolated case that a piece of HAE equipment manufactured in Brisbane for use in New South Wales was sent to Londonderry for testing (usually two trips), then approved by the New South Wales Department of Mineral Resources. Should a similar piece of equipment be used in Queensland, Queensland approval was then required. This process sometimes took eighteen months.

When SIMTARS began serious operation in 1988 and it became evident that there was competition, Londonderry shortened the time to six months and SIMTARS to some three months including approval time.

As from 1 July this year, SIMTARS has been issuing Certificates of Conformity which allows "compliant approved" equipment to be forwarded to a mine and used, a process now normally taking less than four weeks. Since 1988 a sound cooperative working relationship has built up between the Inspectorate and SIMTARS and, as a result, approvals are now handled much more efficiently; however, the Inspectorate will be pleased to see the end of duplication of book work with the implementation of the new Coal Mining Act.

Secondly, manufacturers who have taken the step to implement Quality Workshops will, after type-testing, be able to supply further equipment to the end user without further laboratory testing after having affixed the Ex. Mark. This procedure

will reduce the lead time for the supply of HAE equipment even further.

Finally, provided JAS-ANZ has arranged for reciprocity in overseas laboratories, then export/import of HAE equipment will be able to be forwarded direct to end users for immediate use.

Before concluding, I would like to draw your attention to an area which has had very limited success and one which is of great concern; this item was No. 5 on the original agenda in 1988. This is the area of repair and overhaul of HAE equipment. Currently the New South Wales Department of Mineral Resources has in place a system for the repair and overhaul of HAE equipment; all other states rely on HAE equipment being repaired in workshops that do not have the skills to deal with such repairs and, as a result, there have been many cases of flameproof equipment being returned to mines in a dangerous condition.

Until all states have in place a system which will allow HAE equipment to be repaired and overhauled to its original condition or in compliance with the latest standard, safety in underground coal mines is being compromised and is, at best suspect, and at worst a recipe for disaster.

As it is better to do something than nothing, currently there is a committee working with the QEEITC towards producing modules which will eventually produce personnel who are competent in the area of overhauling and repairing HAE equipment.

CONCLUSION

Since the inception of this scheme, eight years have passed, a very slow process indeed and yet the benefits to the industry, both financially and in safety, are considerable, so why the lengthy gestation period.

The reason for this became obvious during the long planning stages where we were trying to implement a scheme that would be difficult to put into operation without the backing of some higher authority and we were indeed fortunate that the Federal Government, after lobbying, saw fit to organise the formation of JAS-ANZ, after which the implementation phase became much easier.

The same results, I believe, could have been achieved through the coal mining industry.

In retrospect, the scheme should have had the initial backing of bodies such as the ACA, QMC and NSW Coal Association, then the whole process could have been considerably shortened.

However, there does appear to be a large communication problem in the industry as the above bodies appear to show very little interest in engineering activities. It is felt that the reason for this is simply that the engineering side of the industry has little or no representation in these organisations and, until such time as there are both Electrical and Mechanical Representatives in these organisations with an equal voice, and there is representation on such committees as ACARP, the industry will be fragmented, consisting of Mining, Mechanical and Electrical Sections and not an industry which embraces all three disciplines.

Notwithstanding the above comments, the electrical side of the industry has had some significant achievements, however to make further progress in the repair and overhaul of HAE equipment and future projects, the assistance of the industry's executive management would be essential.