

Review of New South Wales corrosion protection regulation

Final report

November 2010



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Summary and recommendations

Corrosion Protection Systems (CPSs) are used to protect underground metal structures from corrosion. They operate by sending a low voltage direct current through ground or water to a structure. While this protects the CPS owner's asset, it may corrode nearby underground metallic structures owned by others. To protect underground metallic structures in NSW, which are valued at over \$18 billion, many of which deliver utility services, a regulatory framework for corrosion protection systems is in place. This requires owners to test their CPS, obtain the consent of affected asset owners and then provide their details to a public register administered by the Department of Industry and Investment (I&I NSW) before the CPS can be operated.

The current approach to CPS regulation has been in place in NSW since 2003. Stakeholders have since raised concerns about the accuracy of the register because of delays in retesting, and problems with the compliance and enforcement framework. Questions have also been raised about whether the existing approach is the most efficient way to address the risks posed by CPSs.

In July 2010, the Better Regulation Office and Industry and Investment NSW released an Issues Paper seeking feedback on the current regulatory scheme. The paper identified a number of options for a future regulatory and administrative framework.

Consultation with stakeholders has informed the review recommendations contained in this report. The review finds that a public CPS register is an effective way of addressing risks to metallic structures by providing information to third parties about the location of CPSs so that they are aware of the location of any CPS near their own infrastructure and are able to work with the system owners to minimise any risks from nearby CPSs. The register needs to be mandated by the NSW Government to ensure that all system owners are required to provide the information about their systems to a central public register. The review also found that a NSW Government administered register is probably the most efficient means of running the register.

In order to ensure the information in the register is kept up to date, CPS owners will be required to provide an annual return to I&I NSW updating the status of all their systems. This is consistent with the NSW Government's performance management approach to regulation of the electricity and gas network businesses.

The review also recommends that as CPS owners will be providing an annual return on the status of their systems, some of the regulatory burden associated with the existing scheme can be reduced by no longer requiring CPSs to be re-registered.

Improvements can also be made by removing any ambiguity with regard to the responsibilities of CPS owners to prevent damage to other metallic structures and their obligations to comply with regulatory requirements.

Additional industry-based funding should increase resources provided by I&I NSW to enforce the legislation. Giving I&I NSW the power to issue penalty notices for offences relating to the register should also improve the efficiency of enforcement.

Recommendation 1

A public register detailing all operating corrosion protection systems should be maintained. Systems that are currently exempt from registration (under clause 4 of the *Electricity Supply (Corrosion Protection) Regulation 2008*) will continue to be so. This register will record details

such as the system number, system owner, contact person, location, and approved operating conditions (including retesting period). Only one owner shall be registered for each system.

Recommendation 2

The register should be maintained by Industry & Investment NSW. It should be clarified in the *Electricity Supply Act 1995* and *Electricity Supply (Corrosion Protection) Regulation 2008* that no liability accrues to the NSW Government as a result of administering the CPS register.

Recommendation 3

The regulatory regime should be operated on a cost recovery basis. An appropriate regime which covers I&I NSW's costs in managing the regulatory regime will be developed with Treasury.

Recommendation 4

In order to facilitate compliance with the Regulation, each system owner shall submit an annual return to I&I NSW about the CPSs currently operated by the owner as at 30 June to confirm matters recorded on the register. In line with the performance regulation approach adopted for electricity and gas in NSW, this annual return shall be submitted by the CEO of the system owner. The report must also include a corrective action and timeline for addressing any non-compliance identified in the return.

Recommendation 5

CPSs should only be required to be registered once. Retesting periods will vary according to risk levels and be specified as a condition of registration when the CPS is presented for registration, as is currently the case. It is an offence to operate a CPS that has not been registered or has not been retested in accordance with the legislation.

Recommendation 6

It should be clarified that CPS owners are responsible for CPSs maintenance and testing, and compliance with all registration and notification requirements under the Regulation, including submitting an accurate annual return. Failure to do so is a breach of the legislation and can lead to I&I NSW cancelling registration and/or imposing penalties.

Recommendation 7

I&I NSW should inform CPS owners and testers about their obligations under the Regulation and ensure that there is effective communication between I&I NSW and the industry, including advance notification of CPSs due for retesting.

Recommendation 8

I&I NSW should be given the power to issue penalty notices for offences under the Regulation.

Recommendation 9

I&I NSW shall conduct periodic reviews of the register to identify any non-compliance. Any non-compliance identified shall be brought to the attention of the CEO of the CPS owner. The owner will be requested to submit an explanation within 30 days as to why enforcement action should not be taken and also a corrective action report.

1. Introduction

Metal structures, such as cables, pipes and buildings made from reinforced concrete, are at risk of corrosion where they are buried in soil or immersed in water. There is also a risk of corrosion from the effects of stray electrical currents from electrified transportation systems such as the NSW electrified rail system. Corrosion can cause significant maintenance or repair costs. If corrosion causes a structure used to transport electricity, gas, telecommunications or water to fail, it can jeopardise both public safety and the delivery of essential services. As more power lines and gas pipeline assets are installed underground to meet growing needs in already crowded areas, the risk from corrosion protection systems to nearby structures is likely to increase with time.

Corrosion Protection Systems (CPSs) can be installed to send a low voltage direct current through ground or water to a structure. While the electrical current applied to a building or pipeline by a CPS protects the structure from corrosion, it may cause corrosion to a third party structure. This means that it can cause damage to other buildings or pipes that are nearby, which poses a significant risk to major assets. There is over \$18 billion worth of underground metallic structures in NSW, many that deliver water, gas, electricity and telecommunication services. The majority of CPS owners and operators are large corporations or bodies who own or operate buried or immersed structures for the purpose of providing utility services.

CPSs are regulated in NSW to ensure public safety and the integrity of assets by requiring all CPS owners to register their systems with Industry and Investment NSW (I&I NSW).

The current approach to CPSs regulation in NSW has been in place since 2003. As part of a review of the regulatory framework in 2008, stakeholders raised issues about the current approach including inefficiencies in the retesting process, delays in re-approval and a lack of reliable information available about existing systems. I&I NSW has identified a failure of the compliance and enforcement framework to ensure the regulation was achieving its objectives. While stakeholders expressed support for the current approach, they also expressed an interest in further discussing reform options to ensure the effectiveness of the regulatory framework.

The Better Regulation Office (BRO) and I&I NSW have conducted a review of the approach to CPSs regulation in NSW. An Issues Paper was released in July 2010 seeking feedback on the current approach. This report sets out the recommendations that arise from the review, taking into account the goals of regulation, stakeholder input and the need to protect assets from corrosion protection system-related damage in the most efficient way.

2. Background

2.1 Current regulation of Corrosion Protection Systems

The aim of the CPSs regulatory framework is to minimise the damage that the systems may pose to third party assets and ensure public safety by requiring system operators to have their systems approved and registered on a public register. The framework is underpinned by the *Electricity Supply (Corrosion Protection) Regulation 2008* (the Regulation) and the *Electricity Supply Act 1995*. Under the Regulation, a person who wants to operate a CPS with a current of over 150 milliamperes must apply to the Director-General of I&I NSW for approval (clause 4 of the Regulation excludes very small, low voltage systems, systems attached to sealed water storage tanks that isolate the current from the outside of the tank and ships, while clause 5(3)

excludes the operation of a testing system). It is an offence to operate a system that is not approved. The maximum penalty is 200 penalty units for a corporation and 50 penalty units in other cases (\$22,000 and \$5500). No penalties have been issued to date.

The application must set out the proposed conditions for the operation of the CPS, include the results of an interference test run to ensure the impact of the CPS on nearby structures is acceptable, and certify that there are no third party structures in the vicinity of the CPS or, if there are, that the owners of those assets were given an opportunity to object to the CPS. This ensures that the identified third parties are aware of the existence of a CPS in the vicinity of their underground structure, and have a say in the operation of that CPS.

The application must be in the prescribed form and be accompanied by a \$90 application fee. The Director-General is able to approve or deny the application, and can also vary, suspend or cancel an approval after it has been given. While the Director-General can approve a system for up to seven years, approvals are usually granted for a shorter period. Most systems are approved for one, three or six year period which means that systems are required to be retested and re-registered before the end of the approval period. The Director-General can also require that a CPS be tested to make sure that it is compliant with the conditions of its approval or to make sure it is not impacting third party assets.

The Director-General maintains a public register that includes details of approved systems, any variations, suspensions and cancellations. It also includes any conditions placed on an approval. If a CPS is sold or stops operating, the operator must inform the Director-General within 28 days. At the end of June 2010, there were 1,122 systems registered. Of the 1,122 CPSs registered, there are 876 cathodic protection systems (which electrically protect metallic structures, water or fuel pipelines and storage tanks, as well as wharves), 190 railway drainage bonds (which capture and divert stray current from railway lines) and 56 Trads (which drain stray current from one structure to another).

The register allows any interested members of the public (including any future third party structure owners) to access this information by calling or emailing I&I NSW. Details of CPS owners are in the register and interested parties can contact and work with them to avoid any potential risk from the CPS to their proposed structures. Between January and September 2010, 170 telephone inquiries and 147 email inquiries were received by I&I NSW relating to the location of CPSs.

2.2. Problems with the current approach

Inaccurate register

The main concern with the existing approach is that not all CPSs currently registered in NSW are being re-tested and not all applications for re-registration are being received. This is contributing to an inaccurate and unreliable register since the re-registration process is the primary means of updating the register.

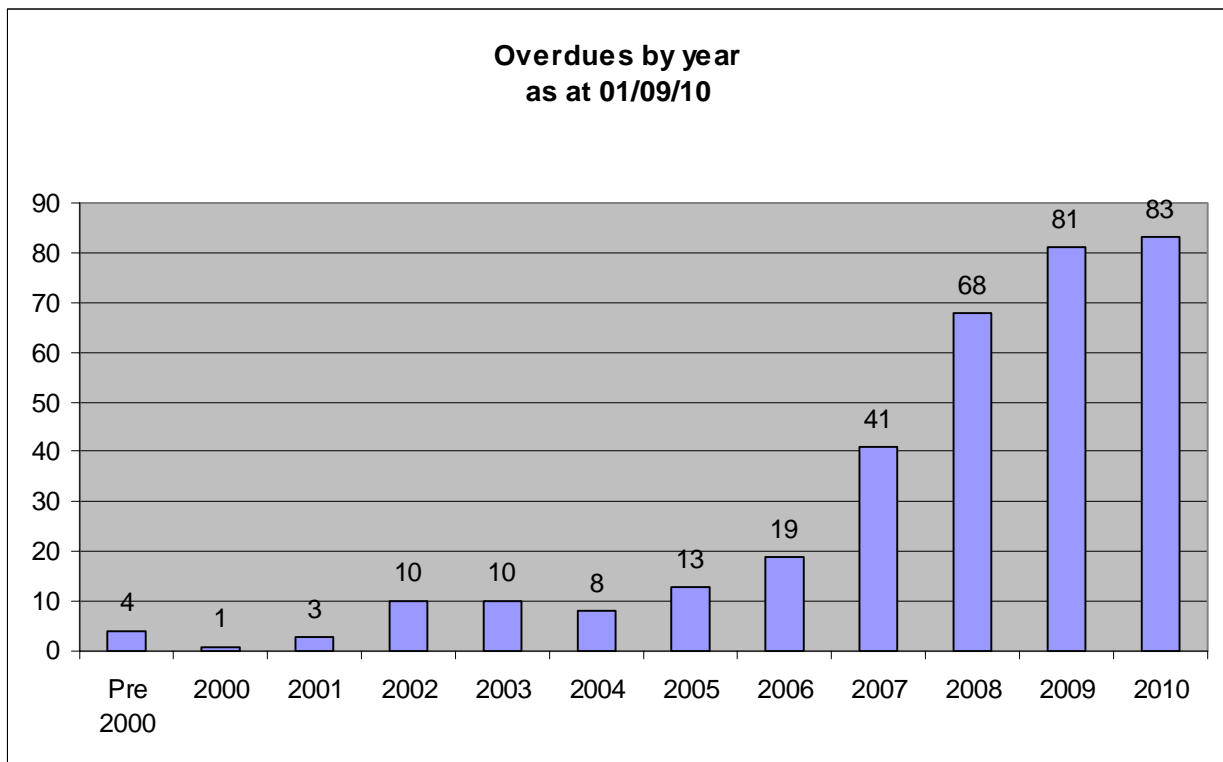
The current Regulation provides for penalties of varying magnitudes for different types of non-compliances based on the severity of the offence. I&I NSW has not issued any penalties to any system owners for non-compliance as this needs to occur through court action rather than the issue of a penalty notice. However, I&I NSW has continued to work with the industry to encourage compliance by sending reminder letters to system owners. The first letter is sent approximately nine months before the re-registration is due (sample letter attached at Appendix

A) with the second letter sent three months before the re-registration date (Appendix B). The third letter is sent just after the expiry of the registration (Appendix C).

In late 2009, reminder letters were sent out for approximately 440 systems that were overdue for re-registration at that time. A total of 225 applications (including renewals and new applications) were processed by I&I NSW from July 2009 to September 2010.

Recent changes to the internal I&I NSW procedures and the current register limitations have resulted in reminder letters only being sent for expired systems.

At 1 September 2010, there were 341 systems which had not been re-approved to operate in NSW and 258 of these have been overdue for re-testing and re-approval for more than 12 months (see chart below).



This reflects a very high level of non-compliance, with expired registration for about 30% of the systems. This means that a large number of CPSs have not been re-tested in accordance with the conditions of the approval and are operating without approval. Alternatively, for some systems, this may mean that the owners of some decommissioned systems have not notified I&I NSW of the changed status of these systems and therefore these systems have not been removed from the register. This has led to the register not being updated and could potentially lead to third party asset owners or future CPS operators making erroneous decisions about the safety of surrounding assets.

Unnecessary administrative burden and cost

The level of risk posed by CPSs and the need for government intervention to address this risk have not been examined for some time – there have not been any reports of damage resulting from a system in the past ten years in energy or water supply infrastructure. This could be because of the success of the regulatory framework, but it also may reflect the low level of risk

posed by CPSs, particularly given an operator's interest in ensuring that the CPS is installed and maintained correctly and that it is not held liable for any damage that is caused to surrounding assets. There may also be difficulty in quantifying the possible damage to third party structures from CPSs due to the complexities involved in tracing the source of corrosion.

The review has examined whether the current administrative burden and cost imposed by the regulatory framework are necessary to mitigate the risk of corrosion caused by CPSs.

Government approval possibly undermines operator responsibility

There have been concerns that CPS operators may be relying on 'government approval' of systems to ensure safe operation, rather than actively monitoring maintenance and operation themselves. However, the approval process does not reduce an operator's responsibility to make sure a CPS is working properly. An operator who relies solely on the framework to ensure a system's safety and effectiveness may be risking damage to their own assets or adjoining assets, incurring a significant level of cost for their own rectification work. On the other hand, ensuring safe operation of a CPS by regular re-testing and maintenance of the CPSs may lower an operator's financial exposure that results from liability for damage done to third party assets.

3. Review process

The aim of the review was to identify the risks associated with the operation of CPSs for nearby structures, and the most appropriate government response to mitigate those risks, particularly focusing on ensuring an efficient and effective framework and minimising regulatory burden for system operators, proposed system operators and the owners of third party assets.

An Issues Paper was released in July 2010. The Paper provided background on the current approach to CPS regulation and a range of reform options, including maintaining the current approach, removing the regulatory framework and industry self regulation.

A broad range of stakeholders were invited to comment on the issues paper, including registered CPS owners, industry bodies and owners of major assets and infrastructure. A general invitation for submissions was also widely circulated to ensure all interested parties had an opportunity to make a submission.

Ten submissions on the Issues Paper were received. A list of these submissions is included at Appendix D.

The consultation process included meetings with key stakeholders, including attending meetings of the NSW Electrolysis Technical Committee (ETC) to discuss the review, and informal consultation with a range of parties. The Committee comprises a range of all major CPS owners including electricity, gas and water utility owners. A separate face to face meeting was held with Integral Energy during the consultation period. After preliminary recommendations had been identified, a subsequent meeting was held with the NSW Electrolysis Technical Committee to discuss the recommendations. This meeting was attended by approximately 20 representatives of the member organisations.

Stakeholder views

Generally, stakeholders emphasised the importance of a government-supported regulatory framework to ensure public safety and the reliability and integrity of assets. There was some recognition of the gaps in the current framework, but the approach of a register with a testing framework was supported. The Australasian Corrosion Association's view is that preventing

third party corrosion is more cost effective than addressing damage caused by a faulty CPS that is at an advanced stage.

Stakeholders also emphasised the importance of ongoing government involvement in the framework. For example, Energy Australia said that the current approach to approval and testing has ensured the safe and responsible use of CPSs, but that continued industry confidence would only be maintained through government regulation. Submissions outlined that government intervention was vital to ensure an effective compliance and enforcement framework underpinned the register (ensuring accuracy of information on the register). This is particularly relevant for small CPS owners who choose not to be a member of the ETC. For members of the ETC, the Regulation provides a very useful framework in the event that the negotiations between the system owners and third party asset owners are unable to achieve the desired safety outcomes.

Private registers were rejected. The proposal to establish a single register privately managed but mandated by Government was rejected. This was thought to be too complex and costly to achieve as it would require administrative infrastructure to perform a limited function, would need to interface with the Government if enforcement action was required and would be anti-competitive as a single private service provider. The proposal to establish multiple private registers was also rejected. The assessment was that these would result in overlap and would be too complex to achieve.

Different stakeholders identified different failings in the way the current approach has worked. A number of stakeholders commented that administration of the current register had not been adequate and had led to the inaccuracies identified in the Issues Paper.

Stakeholders stated that the cost of the regulatory framework was low compared to the avoided cost of asset failure. There was a general recognition that a more effective framework would cost more. Relevant stakeholders indicated a willingness to provide additional funding through registration fees to support a more comprehensive register and compliance and enforcement framework.

4. Approach in other jurisdictions

South Australia, Tasmania, Western Australia and the ACT do not formally regulate the use of CPSs. However, the number of CPSs and density of infrastructure in those jurisdictions is not strictly comparable to NSW and Victoria.

It is noted that Victoria and Queensland have regulatory frameworks similar to NSW, although NSW' framework may be considered more onerous as it applies to some CPSs that are excluded in Victoria. For example, in Victoria systems under two amperes do not have to re-register and larger systems only need to be re-registered every ten years. Victoria faces a greater risk of corrosion in its city area as a result of its electric tramways; the dense concentration of intersecting tracks adjacent to buried buildings and structures means there is a high risk of stray current from CPSs causing damage.

In Queensland, only powered systems over 0.25 amperes need to be registered, although they need to be re-registered every five years. The Queensland *Electrical Safety Regulation 2002* also includes detailed requirements for notifying all relevant persons of a proposed system 60 days prior to commencing installation and allowing those persons to examine the proposal. The Regulation also sets requirements for testing of systems prior to registration.

The regulatory approach to CPSs throughout Australia is set out in Table 1.

5. Findings

Is there public risk from the operation of corrosion protection systems?

It is accepted that corrosion protection systems can cause corrosion in surrounding metallic structures. It is difficult for owners of structures in the vicinity of a CPS to detect its presence given the amount of infrastructure involved, the invisibility of stray current and the length of time over which corrosion can occur. While common law provides for damages if third party structures are damaged by a CPS, it could be difficult and expensive to prove causality. Energy Australia indicated in its submission that "Reliance on common law principles of negligence is not an effective nor fair way of managing incorrectly administered/implemented/designed CPS." Sydney Water stated that "Damages often occur over a long period of time, and CPS may have changed ownership/operator. So it may be difficult to seek the party responsible."

In addition, any legal action would take place after damage has occurred, which can be disruptive and have public safety consequences. The Australian Corrosion Association indicated that "Prevention of third party corrosion is more cost effective (time, money, HR, public disruption) and successful than addressing them when at an advanced state, sometime many years after the problems manifested. "

How does a register of CPSs mitigate risk?

All stakeholders emphasised the important role played by the register. For example, Telstra considers the register a vital instrument for all underground infrastructure asset owners within NSW to maintain the longevity and integrity of their assets.

Table 1: Regulation of corrosion Protection Systems in Australia

	NSW	VIC	QLD	SA	TAS	WA	ACT
Legislation	Electricity Supply (Corrosion Protection) Regulation 2008	Electricity Safety (Cathodic Protection) Regulation 2009	Electrical Safety Regulation 2002	Electricity (General) Regulations 1997	Electricity Industry Safety and Administration Act 1997	None	None
Enforcement agency	Industry & Investment NSW	Energy Safety Victoria	Electrical Safety Office (QLD)	Office of the Technical Regulator (SA)	Tasmanian Electrolysis Committee	N/A	N/A
Minimum system requirements for registration	0.15 amperes	All systems must be registered, but only systems over 2 amperes have to be re-registered	0.25 amperes	No requirement to register a CPS	No requirement to register a CPS	N/A	N/A
Period of registration	maximum of 7 years	Only systems above 2 amperes have a fixed registration period of 10 years	5 years	N/A	N/A	N/A	N/A
Application fee	\$90	up to 0.25 amperes: \$115.28; 0.25 amperes up to 2 amperes: \$288.53; over 2 amperes: \$651.60	\$245	N/A	N/A	N/A	N/A

Stakeholders supported the mandatory nature of the register. Energy Australia and Sydney Water specifically stated that a mandatory regulatory framework to ensure accurate and timely information about the location of currents is critical to protect assets.

The BRO and I&I NSW agree that the provision of information about the location of CPSs helps identify the source of risk and allows asset owners to take appropriate steps to protect their assets. It is important that this is a mandatory requirement so that the information is comprehensive and reliable.

The fact that CPS owners must go through a testing process in consultation with currently affected infrastructure owners even before a CPS can be registered is proactive in drawing the attention of affected infrastructure owners to the proposed CPS and requiring its impact to be assessed before it begins operation.

Once compiled, the CPSs register centralises information about CPSs and allows CPS owners, third party asset owners, prospective CPS operators and members of the public to access information about CPSs operating in a particular area. This ensures that there is minimal asset damage as a result of CPSs, protecting public safety and third party asset integrity.

The risk of CPSs causing damage to other structures varies with the size of the CPS. In NSW, the *Electricity Supply (Corrosion Protection) Regulation 2008* currently requires all CPSs with a maximum current of over 150 milliamperes to be subject to registration requirements. CPSs below this size (sacrificial anode) are considered to have a limited ability to cause stray current damage to nearby assets. There is no evidence which indicates a need to change this threshold.

A single register or multiple registers?

The review considered whether there should be a single register or multiple registers approved by government. All stakeholders that made submissions supported a single register. RailCorp, for example, indicated that the current framework has the advantage of providing a central register of all CPSs which assists infrastructure owners to be aware of CPSs in their vicinity and engage in appropriate consultation with the owners to manage corrosion protection issues. RailCorp also noted that there is a possibility that multiple registers would lead to a breakdown of coordination between stakeholders, leading to an increased risk of infrastructure damage.

The BRO and I&I NSW agree that a single register minimises search costs for interested parties and the public and also minimises the risk of inconsistent information on multiple registers. A single register is also more efficient if any enforcement action needs to be taken.

Recommendation 1:	A public register detailing all operating corrosion protection systems should be maintained. Systems that are currently exempt from registration (under clause 4 of the <i>Electricity Supply (Corrosion Protection) Regulation 2008</i>) should continue to be so. This register will record details such as the system number, system owner, contact person, location, and approved operating conditions (including retesting period). Only one owner will be registered for each system.
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Who should maintain the register?

The review considered whether savings could be achieved by having a privately administered register instead of a government one. The issues paper indicated that the cost of running the current register in I&I NSW is around \$80,000 a year as reflected in fee revenue. In particular, the issues paper noted that underground asset owners have taken action to prevent damage to their buried assets by establishing the Dial Before You Dig (DBYD) service. On behalf of its members, it coordinates information about the location of existing underground assets and makes that information available to potential excavators. Many stakeholders that have an interest in corrosion protection are already involved in the DBYD scheme. The issues paper sought comment on whether it would be a low-cost option to establish an industry CPS register and information provision service as an adjunct to DBYD's existing excavation information service.

Submissions to the review generally did not support using DBYD to establish and maintain a CPS register. Jemena Asset Management pointed out that "the drivers associated with these two controls are completely different. Third party damage has a direct and measurable impact from the action associated with impact damage to an asset. This is not the case with CP systems." RailCorp noted that DBYD members have a common interest in protecting their assets from excavation work, while CPS owners do not have the same incentive to disclose information about stray current impacts on third parties. Telstra noted that 20% of CPS operators in NSW are not represented on the DBYD committee.

It is accepted that the motives for providing information to DBYD are different to the purpose of providing information about CPSs and that mandatory rather than voluntary provision of CPS information is necessary, as discussed previously. Given the difference in membership between DBYD and CPS owners, there also appears to be less of a natural synergy between the two than was previously thought.

If a privately administered register separate to DBYD was to be established, this would be expensive. Other complexities would arise from having a non-government register in terms of mandating registration. This would be anti-competitive and the private operator would not have any regulatory ability to pursue those not registering. Energy Australia submitted that "For practical reasons, the register should remain with the regulator... While its possible that a third party could manage the operation of a CPS register there would have to be effective legislation written around the implementation, operation and management of a third party controlled CPS register. It is also likely that this arrangement would lead to an increase in cost to CPS operators which would have to be passed onto the community."

For these reasons, it is suggested that the register should be maintained by a NSW Government agency such as I&I NSW. Similar to the approach taken in the *Pipelines Act 1967* in relation to the pipelines register maintained by the NSW Government, it should be clarified that no liability accrues to the State due to the keeping of the corrosion protection register.

However, consistent with the NSW Government's current approach to consolidate government licensing functions with the Government Licensing Service, where appropriate, it would be appropriate that I&I NSW reserve the right to consider using the Government Licensing Service to assist with the administration of the register in future. Alternatively, I&I NSW could consider other options for the maintenance of the register if such an option was assessed as being cost effective.

Who should pay for maintenance of the register?

In administering a register which provides public information about the location of CPS that have been tested to the satisfaction of owners of metallic structures in the vicinity, I&I NSW is

providing a service which addresses risks primarily faced by CPS owners and infrastructure owners. Accordingly the register should be administered using cost recovery principles.

The registration fee charged by I&I NSW is \$90, raising \$80,000 in revenue annually. This compares with the fees charged by Queensland (\$245) and Victoria (from \$115.28 to \$651.60 depending on the size of the system). However, stakeholders such as RailCorp acknowledged that a more comprehensive approach to administering the register would lead to additional costs. The majority of stakeholders indicated that they were prepared to increase contributions to the running of the register to ensure that it is effective. I&I NSW should work with NSW Treasury to determine an appropriate cost recovery model.

Recommendation 2: The register should be maintained by Industry & Investment NSW. It should be clarified in the *Electricity Supply Act 1995* and *Electricity Supply (Corrosion Protection) Regulation 2008* that no liability accrues to the NSW Government as a result of administering the CPS register.

Recommendation 3: The regulatory regime should be operated on a cost recovery basis. An appropriate regime which covers I&I NSW's costs in managing the regulatory regime will be developed with Treasury.

How can the accuracy of the CPS register be improved?

Long periods between registration (up to 7 years) and also limited enforcement options available to I&I NSW have contributed to the lack of ability to effectively monitor CPSs by industry and the NSW Government. This in turn has promoted non-compliance and inaccuracies in the register.

In order to encourage CPS owners to proactively monitor their own compliance it is proposed to require them to submit an annual return, signed by the Chief Executive Officer (CEO), about the CPSs currently operated as at 30 June each year to confirm matters recorded on the register. This will assist significantly in ensuring the register is regularly kept up to date and accurate.

For example, when a CPS is sold or decommissioned, I&I NSW is often not notified as required. In preparing the proposed annual return, the organisation would take stock of all current CPSs and identify those that have been sold or decommissioned during the year. This would also ensure that if there have been any business mergers or acquisitions during this period, the new legal owners of the system are accurately recorded on the register.

The proposal is consistent with the performance based regulatory approach in place in NSW for energy network assets that is reflected in the *Electricity Supply (Safety and Network Management) Regulation 2008* and *Gas Supply (Safety and Network Management) Regulation 2008*.

As the report would go through the necessary rigour for signing off by the CEO, the process would ensure that the organisation (and not just a staff member) is aware of its regulatory obligations and the CEO is accountable for compliance with the regulatory requirements. It will be offence not to submit or submit an incorrect annual return.

To make it easier for the system owners that already lodge other reports with I&I NSW, it is proposed that system owners that are also Licensed Pipeline Operators, Gas Network Operators and Electricity Network Operators (including RailCorp), include this report as part of their existing annual reporting requirements. For other System Operators (Telstra, Sydney Water and others), this annual report would be submitted separately.

In order to ensure that corrective follow up action is taken to address any non-compliance identified in this report, the annual return would also be accompanied by a corrective action plan that specifies the action and timeline for correcting each aspect of the non-compliance identified in the annual return. Such corrective action shall be completed no later than 30 September in that year. A corrective action close-out report, signed by the CEO, shall be submitted by 30 September.

<p>Recommendation 4:</p>	<p>In order to facilitate compliance with the Regulation, each system owner shall submit an annual return to I&I NSW about the CPSs currently operated by the owner as at 30 June to confirm matters recorded on the register. In line with the performance regulation approach adopted for electricity and gas in NSW, this annual return shall be submitted by the CEO of the system owner. The return must also include a corrective action plan and timeline for addressing any non-compliance identified in the return.</p>
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How frequently should testing and registration occur?

According to the Australian Corrosion Association, the CPS register “logs the consequence/ effects of CPS applications (i.e. cathodic protection current or drained stray current) and how successful that process is in protecting third party assets from stray current interference. This process is transient in nature” and “CPS owners need to monitor it and keep it confined.” In other words, testing of CPSs needs to occur from time to time to manage the risk of stray current from CPSs. The risk of corrosion varies according to factors such as the size of the CPS and proximity to other structures and therefore the level of interference noted on third party structures. This can change over time, particularly as new structures are installed. Other factors which affect the frequency of re-testing include the resistivity and moisture content of the soil in which the structure is buried, the condition of the structure protected by a CPS and any coating applied to the structure.

The current Regulation requires testing to take place before registration can occur. Registration is for a maximum of 7 years, but testing is carried out at different intervals for different systems. For example, the current data indicates that the re-test period for “cathodic protection systems” and Trads is 6 years (70%), 3 years (25%) and 1 year (5%). For “railway drainage bonds”, it is 3 years for 85% of the systems and 6 years for the remaining 15%. Re-testing periods are generally recommended by the Electrolysis Technical Committee (ETC) following testing and discussions between the CPS owner and affected infrastructure owners. This recommendation is then adopted by I&I NSW and reflected in the registration conditions.

In Victoria, registration for systems above 2 amperes is required every 10 years but is subject to an annual audit by the owner, who must inspect and record the operating current of the system and allow their record to be inspected by Energy Safe Victoria and affected owners of metallic structures. In Queensland, registration is for 5 years but subject to additional tests if a new foreign structure is introduced, or if the system is changed in some way, or if required to do so by the regulator.

In NSW, periods for re-testing a CPS are essentially based on a risk assessment by the CPS owner and affected infrastructure owners, often via the ETC. Insofar as the test period varies according to the risk, it is arguably more flexible and targeted than the criteria for re-testing established in Queensland and Victoria.

Currently in NSW, the re-test period is the same as the re-registration period. It is proposed that all CPS be only registered once because any changes will be identified in the annual return, including if the CPS has been decommissioned, changed ownership or retested. Once a CPS has been placed on the register, other asset owners have been made aware of its existence and can take steps to address risks posed by the CPS. Once a recommended retest period has been determined based on the risk levels associated with the specific system, and provided to I&I NSW the retest period is included in the conditions of the registration. It is already an offence for a system owner to not comply with the conditions of the registration. This would ensure that the risk of any damage to third party structures is contained by requiring the system owners to retest the system in accordance with the conditions of the registration.

Recommendation 5: CPSs should only be required to be registered once. Retesting periods will vary according to risk levels and be specified as a condition of registration when the CPS is presented for registration, as is currently the case. It is an offence to operate a CPS that has not been registered or has not been retested in accordance with the legislation.

Who should be responsible for testing CPSs?

Under common law principles of negligence, the owner of a metallic structure that has corroded because of the operation of a CPS could seek damages for the cost of rectification and loss of their asset from the CPS operator. The existence of a register with information about the location of CPSs does not change the responsibility of owners of CPSs to ensure that their systems are operating appropriately and not causing damage.

The current Regulation requires that before operating a CPS, the owner of the CPS must obtain approval from government. However, the procedures outlined in the Regulation place responsibility for the testing of the CPS on the CPS operator. Applications for registration must be accompanied by interference test results and statements from the owners of structures in the vicinity that they don't object to the system. In effect, the current regulatory framework simply registers CPS that have met certain process requirements. No formal approval is given, or withdrawn, if follow up testing is not conducted.

The legislation should be clarified to reflect what happens in practice – government operates a register which records the results of testing undertaken by CPS operators. While clause 10 of the current Regulation refers to I&I NSW possibly undertaking or arranging for the testing of a CPS, this does not happen in practice. However, it is considered that this provision and the corresponding regulatory powers must be retained as they may be required in a situation where there is a potential dispute between a system owner and a third party. Furthermore, those provisions also discourage systems owners from withholding any technical information concerning the system at the time of registration or any subsequent changes to the system design or operation.

Testing of CPSs is currently coordinated by the NSW Electrolysis Technical Committee (ETC), a voluntary body consisting of owners or representatives of owners of most of the underground utility structures in NSW. A system owner who is not a member of the ETC hires a consultant to

carry out the required tests. Given that testing of CPSs involves communication between the owner of the CPS and the owners of surrounding metallic structures to gauge the impact of stray current, a collaborative approach between these parties is important.

The ETC:

- has terms of reference and works to a safety plan that ensures agreed safe working arrangements for all scheduled tests;
- has developed codes and guidelines in line with AS/NZ 2832 Cathodic Protection of Metals (the standard for managing stray current interference), ensuring agreed compliance to the operation of registered CPSs;
- meets monthly and consistently reviews and identifies threats to critical infrastructure;
- develops agreed solutions based on the above codes and guidelines.

The ETC represents, in effect, CPS operators and other interested parties, taking responsibility for their own interests in preventing stray current corrosion. Testing is carried out to consistent standards and practices and provides, in effect, a self-regulating process. According to the ETC, 15% of CPS operators in NSW are not members of the ETC. From discussions with the ETC, it is understood that the current ETC is open to having other CPS operators attend meeting and participate in activities. This should be encouraged to improve the collaborative approach to testing which is currently done by CPS operators and owners of metal infrastructure via the ETC. On becoming aware that a CPS operator or a potential CPS operator is not currently a member of the ETC, I&I NSW provides them the relevant information about the ETC and puts them in contact with the Chair of the ETC in order to encourage their participation in testing via the ETC.

In order to improve compliance with registration requirements at a more general level, I&I NSW should consider further actions to ensure that CPS operators are aware of their responsibilities under the law.

It is understood that the ETC currently schedules rotational testing of CPSs on a region by region basis so that relevant parties are present in one location. This promotes efficient testing of CPSs. To facilitate this, I&I NSW should continue to provide advance notice to CPS of required future CPS tests in order to help guide the locations chosen by the ETC for their testing program. ETC members have requested that advance notices from I&I NSW 12 months and 3 months prior to the expiry of registration should facilitate timely retesting.

While the above actions would assist in improved compliance, it should be noted that as with the current regulatory framework, the prime responsibility for registration, timely retests and notification of the decommissioning of any systems would continue to lie with the system owners and operators.

Recommendation 6	It should be clarified that CPS owners are responsible for CPSs maintenance and testing, and compliance with all registration and notification requirements under the Regulation, including submitting an accurate annual return. Failure to do so is a breach of the legislation and can lead to I&I NSW cancelling registration and/or imposing penalties.
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Recommendation 7: I&I NSW should inform CPS owners and testers about their obligations under the Regulation and ensure that there is effective communication between I&I NSW and the industry, including advance notification of CPSs due for retesting.

How can enforcement of the legislation be improved?

The *Electricity Supply (Corrosion Protection) Regulation 2008* currently contains a number of offence provisions. Maximum penalties of \$22,000 for a body corporate, or \$5500 in any other case can be imposed for:

- operating an unapproved corrosion protection system
- operating a corrosion protection system contrary to the conditions of an approval.

Also, a maximum penalty of \$2750 can be imposed on the owner of an approved system who does not notify I&I NSW within 28 days after:

- (a) the system is sold or disposed of to any other person, or
- (b) the system permanently ceases to operate.

Despite these options, enforcement action has not been taken in relation to these offences because the current enforcement framework is considered to be highly time consuming and costly as these matters can currently only be prosecuted in court. Therefore I&I NSW instead chose to spend very limited resources it currently has to administer this program, on other measures to encourage compliance. These measures include the introduction of reminder letters at various stages of the reregistration process, and ongoing liaison with system owners through the ETC by providing consolidated list of overdue systems to encourage a co-ordinated re-testing of the systems. Furthermore, I&I NSW considers that any enforcement action while this review is underway could potentially pre-empt or undermine the review outcomes.

Penalty notices are a common enforcement option and can be issued for over 7000 offences in NSW including those relating to traffic, electricity supply, occupational health and safety, the building industry and water management. They allow the recipient to choose between paying a fixed amount to an agency or going to court to have the matter determined. Offenders benefit from a discounted penalty, from the fact that payment of the penalty is not seen as an admission of guilt and the fact that no conviction is recorded.

Penalty notices are suitable for offences that are easy to establish. Current offences under the *Electricity Supply (Corrosion Protection) Regulation 2008* and proposed additional offences relating to failure to submit an annual return or submitting an inaccurate annual return satisfy this criterion. The ability to issue penalty notices in relation to this Regulation is a way of making it easier and less expensive for I&I NSW to take fast action to promote compliance, particularly if some form of regular communication is established between the ETC and I&I NSW.

Appropriate provisions in the regulation for I&I NSW to establish penalty notices could serve as an effective tool to ensure compliance. In order for any penalty notice to be effective, the penalty amount must be set at a level that clearly removes any financial incentive for the system owner from non-compliance. While this may increase the cost of operating a CPS in the short

term (as CPS owners recognise that regulatory requirements are mandatory), this should contribute to a more accurate register which more effectively addresses the risks identified in this review.

In addition to issuing penalty notices for breaches of the Regulation, I&I NSW will conduct periodic reviews of the CPS register to identify any non-compliance. This will be brought to the attention of the CEO of the CPS owner.

Whenever enforcement action is proposed by I&I NSW (not just as a result of periodic reviews), the owner will be requested to submit an explanation within 30 days as to why enforcement action should not be taken and also a corrective action report on how non-compliance will be rectified.

I&I NSW will engage appropriate resources to undertake investigations of outstanding overdue CPSs to correct errors in the register database on a cost recovery basis as previously outlined.

Recommendation 8:	I&I NSW should be given the power to issue penalty notices for offences under the Regulation.
Recommendation 9	I&I NSW shall conduct periodic reviews of the register to identify any non-compliance. Any non-compliance identified shall be brought to the attention of the CEO of the CPS owner.
	Whenever enforcement action is proposed by I&I NSW, the owner will be requested to submit an explanation within 30 days as to why enforcement action should not be taken and also a corrective action report.

Appendix A: Sample letter notifying upcoming expiry of registration



Dear Sir/ Madam

RE: CORROSION PROTECTION SYSTEM – APPROVAL DUE TO EXPIRE

Our records indicate your company owns «Spell1» currently approved Corrosion Protection System«Spell2», as noted in the attached list. The approval for «Spell3» system«Spell2» «Spell4» due to expire in approximately 8 months time, on the dates indicated in the report. In accordance with Clause 5 (1) of the *Electricity Supply (Corrosion Protection) Regulation 2008* (the Regulation), these listed corrosion protection system«Spell2» will no longer be permitted to operate after expiry of approval.

If operation of «Spell3» system«Spell2» «Spell4» still required after the relevant expiry date, it will be necessary to organise a Testing Officer to arrange testing of your system«Spell2», and to re-apply for approval using Industry and Investment NSW's (I & I NSW) "Application for an Approval for Corrosion Protection System", which is attached. Please note that several attachments are required to be enclosed with the application form. These will require planning on your part to ensure that the application is lodged with I & I NSW in sufficient time (at least 6 weeks before expiry) to ensure that approval is maintained. Your attention is also drawn to the need to provide current information on the acceptance of re-testing, and the views of foreign structure owners on the operation of these systems«Spell2».

If any of the listed system«Spell2» «Spell4» no longer required to be operated, would you please ensure that notice is provided to I & I NSW as it is required under Clause 9 (1) of the Regulation so that our records can be updated.

Should you have an enquiry regarding this matter please contact our Customer Programs Team on (02) 8281 7706.

Yours sincerely

Customer Programs Branch
MINERALS AND ENERGY DIVISION

Appendix B: Sample Reminder Letter



Dear Sir/ Madam

RE: Reminder - Corrosion Protection System Approval Due to Expire.

Industry and Investment NSW's (I & I NSW) records indicate that your company owns «Spell1» currently approved Corrosion Protection System «Spell2», as noted in the attached report. Approval of these systems is about to expire on the dates indicated in the report. In accordance with Clause 5 (1) of the *Electricity Supply (Corrosion Protection) Regulation 2008* (the Regulation), these listed corrosion protection systems will no longer be permitted to operate after expiry of approval.

Our records indicate you have not responded to our request, or notified I & I NSW that these systems have permanently ceased to operate. If you are not able to complete the necessary before the expiry date, please ensure that you arrange for a "Letter of No Objection" to be lodged with the application before the expiry date, to ensure continued regulatory compliance pending completion of testing.

Attached is a further Application for an Approval for Corrosion Protection System together with the Letter of no Objection Form. If continued operation of these systems is required, please complete the application form/s for each system and forward to Industry and Investment NSW at least two weeks before the expiry date. If any of the listed systems are no longer required to be operated, would you please ensure that notice is provided to I & I NSW as it is required under Clause 9 (1) of the Regulation.

If I & I NSW does not receive either an application for approval or notice that operation has ceased by the relevant expiry date, I & I NSW may undertake audits on these systems after that time to ensure compliance with Clause 5 (1) of the Regulation.

Should you have any enquiry regarding this matter please contact our Customer Programs Team on (02) 8281 7706.

Yours sincerely

Customer Programs Branch
MINERALS AND ENERGY DIVISION

Appendix C: Sample Letter Notifying Expiration of Registration



Dear Sir/ Madam

RE: CORROSION PROTECTION SYSTEMS – APPROVAL EXPIRY

This letter is to advise you that approvals of the corrosion protection systems listed in the attachment to this letter have expired. Therefore, in accordance with Clause 5 (1) of the *Electricity Safety (Corrosion Protection) Regulation 2003* (the Regulation), the listed corrosion protection systems are no longer permitted to be operated, except with the written consent of the Director-General.

The New South Wales Government previously wrote to you providing a list of systems for which approval was approaching expiry, together with a recommendation to arrange for testing and lodgement of an application for approval should continued approval be required. No application was received for these systems.

I also note that Industry and Investment NSW (I & I NSW) has not been advised that these systems have permanently ceased to operate, as is required under clause 9 (1) of the Regulation. If any of the listed systems are no longer required to be operated, would you please ensure that such advice is provided promptly to I & I NSW.

If you do wish to continue the operation of these systems, it will be necessary to promptly apply for approval. Should continued operation be required and there are valid reasons why an application for approval cannot be promptly lodged, please provide a written application to the Deputy Director-General, Minerals and Energy Division for consent, as required under clause 5 (3) of the Regulation. This application should be lodged with I & I NSW without delay, and be accompanied by the supporting case for such consent, and a date by when the application for the attached systems will be lodged.

I & I NSW is keen to work with you to promptly resolve this important compliance issue. Please advise me if there is any impediment to you providing the relevant application or notification.

Should you have any enquiries regarding this matter please contact our Customer Programs Team on (02) 8281 7706

Yours sincerely

Customer Programs Branch
MINERALS AND ENERGY DIVISION

Appendix D: Submissions received

- Australasian Corrosion Protection Association
- Country Energy
- EnergyAustralia
- Integral Energy
- Jemena
- NSW Electrolysis Committee
- Railcorp
- Sydney Water
- Telstra
- Tyron Cook

These submissions are available on the Better Regulation Office website.