ICPC Recommendation

Recommendation No. 3

Criteria to be Applied to Proposed Crossings of Submarine Cables and/or Pipelines

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Suggested Citation

International Cable Protection Committee. ICPC Recommendation #3, Criteria to be Applied to Proposed Crossings of Submarine Cables and/or Pipelines, Issue 10A, 12 February 2014.

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1. INTRODUCTION

The continued increase in both the numbers of submarine cables and the exploitation of oil and gas from the seabed inevitably means that there will more cases of crossings between telecommunications cables, power cables and pipelines. The purpose of this document is to give guidance to those who are faced with this situation for the first time. It is also a matter for consideration that the pipeline or cable owner involved in a crossing may have other pipeline/cable crossings in other parts of the world, therefore if one cable owner were to allow a crossing to take place without certain minimum standards it could adversely affect the negotiations of other cable owners.

It must first be stated that all proposed pipeline/cable crossings will have some unique characteristics, therefore each one has to be considered individually. However there are still some basic questions that need to be asked as the first step in considering any proposed crossing so that areas of concern can be identified and mutually acceptable solutions developed.

2. BASIC CONSIDERATIONS

2.1. All Crossings

2.1.1 Nature of seabed.

2.1.2 Type of cable.

2.1.3 Size of pipeline.

2.1.4 Notification of crossing proposal to other seabed users.

2.2 Existing Telecommunications Cable Crossed by New Pipeline/Power Cable

2.2.1 Is cable buried? Deliberate or self-burial? If so, to what depth?

2.2.2 Will pipeline/power cable be trenched? If so, to what depth? What trenching equipment will be used?

2.2.3 Will the pipeline have cathodic protection? If so, what is the planned distance between anodes? If possible, can this distance be increased at the crossing point? Can the anodes be arranged so that the cable is in the mid-50% distance between anodes?

2.2.4 If a power cable, what are its feed voltages? Is it adequately screened? What impact would any residual electro-magnetic field strength have upon adjacent telecommunications cable and/or repeaters?

2.2.5 Is the proposed crossing in the vicinity of a repeater or equaliser? If so, will the presence of the pipeline prevent the recovery of that repeater/equaliser in the prevailing water depth by normal cable repair methods? Can the pipeline/power cable be altered in the planning stage to increase the distance from the repeater/equaliser?

2.2.6 Is there any local legislation requirement protecting submarine cables with which the pipeline/power cable owner must comply?

2.2.7 If it becomes necessary to cut and peel back the cable, are there adequate alternative routes to which traffic may be transferred?

2.2.8 Does the proposed pipeline/power cable route cross the cable at approximately right angles? If not, then serious maintenance problems could arise to both systems, therefore can the pipeline/power cable route be altered in the planning stage?

2.2.9 Has a minimum of two weeks notification been given to all involved parties prior to any operational activity that could affect the performance of working international telecommunications services?

2.3 Existing Pipeline/Power Cable Crossed by Telecommunications Cable

2.3.1 Is pipeline/power cable trenched? If so, to what depth? Has there been natural or artificial backfill? If so, what depth of cover exists now over the pipeline/power cable? Is this cover adequate for the concerns of the pipeline/power cable owner and, if not, what additional depth and type of separation are required?

2.3.2 Does the pipeline have cathodic protection? If so, what is the distance between anodes? Are the anode positions accurately known? Can the cable lay be arranged so that the cable is in the mid-50% distance between anodes?

2.3.3 Does the pipeline/power cable owner have any specific concerns about the safety of the pipeline/power cable? If so, what are they? Will he require any artificial separation to be installed between pipeline/power cable and telecommunications cable? Will the telecommunications cable owner consider artificial separation to be necessary to avoid chafing damage to the telecommunications cable?

2.3.4 Are there any legal requirements regarding operating in the vicinity of pipelines/power cables? If so, what are they?

2.3.5 Does the proposed cable route cross the pipeline/power cable at approximately right angles? If not, then serious maintenance problems could arise to both systems, in which case the telecommunications cable route needs to be altered in the planning stage.

2.3.6 Does the proposed telecommunications cable system section sheet place a repeater in close proximity to the pipeline/power cable crossing? If so, this could cause maintenance problems in the event of repeater replacement becoming necessary, therefore can the section sheet be altered in the planning stage?

2.3.7 If the telecommunications cable is to be buried, either during or after the lay, how close to the pipeline/power cable will the operator allow the burial equipment to approach?

2.3.8 If burial equipment is not allowed within a given distance from the pipeline/power cable, what protection will be required for the telecommunications cable? Double armouring? Rock placement? Are there any local legislation or local authority rules to be considered in this context? Fishing authorities may require coverage of the crossing to prevent the creation of obstacles to fishing gear.

2.4 Existing Power Cable Crossed by Power Cable

2.4.1 Is cable buried? Deliberate or self-burial? If so, to what depth?

2.4.2 Will cable be trenched? If so, to what depth? What trenching equipment will be used?

2.4.3 Are there any legal requirements protecting submarine cables with which the power cable owners must comply?

2.4.4 Does the proposed power cable route cross the cable at approximately right angles? If not, then serious maintenance problems could arise to both systems, in which case can the power cable route be altered in the planning stage?

2.4.5 Has adequate notification been given to all involved parties prior to any operational activity that could affect the performance of the crossed cable?

2.4.6 If burial equipment is not allowed within a given distance from the existing power cable, what protection will be required for the telecommunications cable? Rock placement? Are there any legal requirements or local authority rules to be considered in this context? Fishing authorities may require coverage of the crossing to prevent the creation of obstacles to fishing gear.

2.5 Existing Pipeline Crossed by Power Cable

2.5.1 Is the pipeline trenched? If so, to what depth? Has there been natural or artificial backfill? If so, what depth of cover exists now over the pipeline? Is this cover adequate for the concerns of the pipeline owner and, if not, what additional depth and type of separation are required?

2.5.2 Does the pipeline have cathodic protection? If so, what is the distance between anodes? Are the anode positions accurately known? Can the cable lay be arranged so that the cable is in the mid-50% distance between anodes?

2.5.3 Does the pipeline owner have any specific concerns for the safety of the pipeline? If so, what are they? Will he require any artificial separation to be installed between pipeline and power cable? Will the power cable owner consider artificial separation to be necessary to avoid chafing damage to the power cable?

2.5.4 Are there any legal requirements regarding operating in the vicinity of pipelines/power cables?

2.5.5 Does the proposed cable route cross the pipeline at approximately right angles? If not, then serious maintenance problems could arise to both systems and, therefore, the cable route shall be altered in the planning stage.

2.5.6 If the power cable is to be buried, either during or after the lay, how close to the pipeline will the operator allow the burial equipment to approach?

2.5.7 If burial equipment is not allowed within a given distance from the pipeline, what protection will be required for the power cable? Rock dumping? Are there any legal requirements or local authority rules to be considered in this context? Fishing authorities may require coverage of the crossing to prevent the creation of obstacles to fishing gear.

2.5.8 Has adequate notification been given to all involved parties prior to any operational activity that could affect the performance of the crossed cable?

2.6 Existing Power Cable Crossed by Pipeline

2.6.1 Is the power cable trenched? If so, to what depth? Has there been natural or artificial backfill? If so, what depth of cover exists now over the power cable? Is this cover adequate for the concerns of the power cable owner and, if not, what additional depth and type of separation will he require?

2.6.2 Does the pipeline have cathodic protection? If so, what is the distance between anodes? Are the anode positions accurately known? Can the cable lay be arranged so that the cable is in the mid-50% distance between anodes?

2.6.3 Does the power cable owner have any specific concerns for the safety of the power cable? If so, what are they? Will he require any artificial separation to be installed between power cable and pipeline? Will the power cable owner consider artificial separation to be necessary to avoid chafing damage to the power cable?

2.6.4 Is there any local legislation requirement regarding operating in the vicinity of pipelines/power cables to be complied with?

2.6.5 Does the proposed pipeline route cross the power cable at approximately right angles? If not, then serious maintenance problems could arise to both systems and, therefore, the pipeline route shall be altered in the planning stage.

2.6.6 If the pipeline is to be buried, either during or after the lay, how close to the power cable will the operator allow the burial equipment to approach?

2.6.7 If burial equipment is not allowed within a given distance from the pipeline/, what protection will be required for the power cable? Rock dumping? Are there any local legislation or local authority rules to be considered in this context? Fishing authorities may require coverage of the crossing to prevent the creation of obstacles to fishing gear.

2.6.8 Has adequate notification been given to all involved parties prior to any operational activity that could affect the performance of the crossed cable?

If Section 2.3 applies, then the telecommunications cable will be laid over the pipeline/power cable. If Section 2.2 applies, the telecommunications cable owner must decide on his policy as to whether to allow the pipeline/power cable on top of the telecommunications cable or to require a cut and peel back solution. A requirement for the latter will need to be justified because the pipeline/power cable owner will be required to pay the associated costs. In all cases consideration must be given to protection of the telecommunications cable for its lifetime in respect of physical damage and cathodic corrosion. Therefore, if Section 2.2 applies to an old telecommunications cable, the protection requirements may be less onerous than for a new one.

3. CROSSING AGREEMENT

International Law is inadequate to protect the interests of the parties involved in pipeline and cable crossings and, where a crossing occurs within the legal jurisdiction of a State, the relevant legislation is also rarely sufficient. In addition, the recourse to any court following a conflict of interest is a lengthy and expensive matter. It is therefore very much in the interests of both parties to negotiate an Agreement to cover any pipeline/cable crossing. A sample telecommunications cable/pipeline crossing agreement is available on request to the ICPC Secretary, or members can download it directly from the ICPC's website.

The contents of an Agreement are a matter for the individual parties, but it is recommended that the following points shall be covered:

3.1 Clauses to define the liabilities, obligations and rights of both parties.

3.2 The exclusion/inclusion of consequential losses. It is recommended that consequential losses are excluded.

3.3 Definition of a specific area in the vicinity of the crossing within which the Agreement will operate.

3.4 A general statement of the method of installation of the pipeline or cable as appropriate. The inclusion of installation procedures in the body of the Agreement should be avoided because they may require alteration prior to or during the operation. They may of course be included in the document as an appendix.

3.5 Future repair and maintenance of the pipeline and cable(s): This may include the method by which notification of operations by each party is given to the other.

3.6 Definition of the expiry of the Agreement. If section 3.5 is covered then the normal time is at the removal from service of either the pipeline or cable(s), whichever comes first.

3.7 Provision of representatives from one party to the other party's operations and their rights and limitation of their authority.

4. CONCLUSION

Sections 2 and 3 are not intended to be a complete or definitive list of issues that shall be addressed when pipelines and cables cross each other. There will be items listed which may not be applicable to some areas of the world, and other areas of the world may produce problems not listed above.

The most important consideration is that as soon as it becomes apparent that a crossing will occur, an exchange of information must be initiated as early as possible. In addition, a minimum of two weeks' notification shall be given to all involved parties prior to any operational activity that could affect the performance of working international telecommunications services.

All discussions and negotiations shall be conducted with the understanding that both parties have legitimate concerns. The vast majority of problems can be avoided if they are discussed before budgets are set and the contracts for submerged plant are granted, regardless of whether the requirement is for pipeline or cables.

5. REFERENCES

Document Number	Title
ICPC	Draft Pipeline Crossing Agreement

6. DEFINITIONS

The following words, acronyms and abbreviations are referred to in this document.

Term	Definition

7. ATTACHMENTS

Document Number	Title