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COMITE DE COOPERACION ECONOMICA
DEL ISTMO CENTROAMERICANO

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ASPECTOS INSTITUCIONALES DE LA INTERCONEXION ELECTRICA EN EL ISTMO CENTROAMERICANO

(Comentarios preliminares)

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PRESENTACION

Se presenta a título informativo comentarios preliminares sobre el tema de "Aspectos Institucionales de la Interconexión Eléctrica en el Istmo Centroamericano". Considerado de interés para los asistentes a la cuarta reunión del Subcomité Centroamericano de Electrificación y Recursos Hidráulicos.

Los mismos han sido elaborados en el idioma inglés por la División de Recursos Naturales y Energía de la Secretaría de Naciones Unidas en Nueva York, a solicitud de la subsede de la CEPAL en México.

Central American Interconnection Project

Note on the Organisational Aspects

1. The implementation of an interconnection scheme between any two utilities requires some common action to be taken by the participants. In the simplest case, each utility arranges to build a transmission line to its boundary and link this line with the corresponding transmission line built by the partner utility. Each utility is responsible for the design, procurement, erection and financing of the transmission link on its own territory. However, common problems affecting both utilities and requiring coordination and agreement between them arise as soon as an interconnection is being planned. Assuming a decision on network interconnection is taken by the respective utility managements after both have studied the merits of the interconnection, there will have to be agreement on the design parameters of the interconnecting transmission line and on the precise purpose the interconnection is to achieve. There should be agreement, before any financial commitments are made, on the nature of the power exchanges ultimate envisaged and on the way these exchanges are to be managed. With a syncronous link there will also have to be agreement on system control and load dispatching arrangements which are to allow the two power systems to operate in synchronism.

2. The first step in dealing with these matters is to set up a coordinating committee between the two utilities which will have a direct management responsibility and which will act on behalf of both utilities to implement the desired policy. The committee must be small and flexible and capable of working as an effective team. It must have adequate authority delegated to it by the respective managements. During the crucial periods of project preparation and design, the committee must meet frequently and indeed should have some permanent staff attached to it. In the later phases of day-to-day operation of the interconnection, the committee will need to meet less frequently on management matters and will be more concerned with interphase problems between the two utilities, metering, tarification and statistical evaluation of the operating and financial results.

3. Where multilateral power system interconnections are to be achieved, as is the aim in Central America, a multiplicity of bilateral committees each dealing with only two neighboring countries can be avoided by setting up a single regional coordinating committee as early as possible. This committee will have the same tasks as the bilateral committee previously referred to. Its membership will be

drawn from all the participating utilities. Where power system interconnections are already effective, the operational aspects only of such interconnections come within the responsibility of this central coordinating body. The advantage of establishing a central body as opposed to the continued reliance on bilateral committees (of which there would be six if all the six Central American countries are to be interconnected) would lie primarily in rationalization of effort, in more effective pooling of information and experience and in reduced costs.

4. There are widely differing views on the amount of authority such a coordinating committee should assume. Bearing in mind that each participating utility will remain responsible for its own costs and will thus have to ensure that its power exchanges are economically viable as far as the particular utility is concerned, there may be some reluctance to assign too much authority to a central coordinating body. This issue has had to be faced also in Europe and the solution adopted was to use the coordinating body as a means of dealing with common problems but vesting it with no authority to take financially-binding decisions in behalf of any one member utility. Efficient coordination is an essential constituent of cooperation between utilities and should have priority over an undue degree of utility independence.

5. When appraising the extent of the authority to be vested in the central body, the structure, responsibility and aims of each constituent utility must be kept in mind. Since each of the six Central American countries operates as a political and economic entity, the electricity supply organisation in each country is at the present time operating under the authority of the national government. The financing of electricity supply expansion is entirely the task of the national government or its agencies. Provision of development funds from external sources, international and bilateral, will likewise be arranged by and with the national government. This suggests that any international network interconnection, which is intended in the first instance to improve the economic operation of the national supply organisation, remains a national task. It means in turn that the interconnection arrangement will be bilateral between two adjacent countries. Financing of construction of the interconnecting transmission lines, operation of the power plants to ensure optimum usage of the interconnection, exchange arrangements and tariffs remain a bilateral task.

6. It is conceivable, on the other hand, that a supra-national organisation is superimposed for the sole purpose of implementing and managing the international electric power interchanges. This organisation would act as a broker between the national organisations; it need not affect either the structure or the mode of operation of the national organisations. It could take over interconnecting transmission lines running between clearly defined points of supply in each national network; it could finance and construct such lines. It could formulate exchange agreements and effect short-term exchanges based on national power surpluses and deficiencies notified to it. It could develop tariffs and act as financial broker between the utilities. It could be funded out of a small surcharge on the power rates used for the international exchanges.

7. Considering the question of the immediate course of action, there are thus two possibilities

- bilateral exchanges promoted by national utilities but coordinated by an international committee
- a fully international regional system superimposed on the national networks and managed by a supra-national organisation acting for and on behalf of the participating countries.

A third possibility would be to maintain the status quo and leave each pair of utilities to operate in isolation. The benefits of achieving continuity of the planning work carried out by international agencies, in particular by CEPAL, and of pooling experience gained in implementing and operating power system interconnections would then be lost. This possibility is therefore not one to be considered.

8. If it is accepted that the regional interconnection activities should be coordinated, and possibly managed, by a central organisation, the next question will be how to set up this organisation and what its terms of reference should be. Experience elsewhere in the world has shown that, in a situation where bi-lateral interconnection already exist in some places, the establishment of a supra-national management organisation becomes feasible only after a considerable lapse of time. The reason for this is that the ongoing projects, which are partly operational and partly in various stages of planning and implementation, become difficult to handle without very careful preparation to ensure that none of the expertise already acquired and none of the operational arrangements already in force are adversely affected by the change-over from bi-national to supra-national management. Where supra-national organisations are operative, they are usually set up before network interconnections become effective so that they themselves play a vital role in bringing such interconnections into being.

9. The organisationally and technically simpler coordinating committee will therefore provide a valuable first step towards regional integration. It can be set up at short notice as it will, in the first instance, only be a means of data collection and information exchange. It will become more powerful in time as it gains experience in the financial, technical and operational matters affecting system interconnection. It will become increasingly a focal point dealing with all matters of common concern in the development, construction, and operational aspects.

10. As a second step, the coordinating committee can be converted into a regional managment organisation which will take over all international exchange arrangements. It will absorb in the first instance the regional coordinating committee. It will then purchase from the participating utilities transmission lines and equipment running between specified points of supply. It will likewise purchase power from utilities disposing of surpluses and sell this power to utilities requiring it. It will manage power exchanges both on a contractual and a short-term basis. As interconnection arrangements are expanded, both within the region and with adjacent regions, the new authority will act on behalf of the regional utilities in arranging and managing the regional and inter-regional exchanges.

11. This two-step approach, the setting up of a coordinating organisation followed by its conversion to a management organisation, offers the best solution because it permits the committee's gradual development into a supra-national body. Such development will not interfere with existing activities and will allow experience to be gained and retained for the benefit of the region as a whole.

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