

final report



COMMONWEALTH of VIRGINIA

Joint Legislative Audit and Review Commission
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Philip A. Leone
Director

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July 14, 1988

MEMORANDUM

TO: Philip A. Leone, Director

FROM: Barbara A. Newlin, ^{BAW} Division Chief

SUBJECT: Preliminary Review of State Corporation Commission Computer Procurements and Activities

I have completed my preliminary review and assessment of recent computer procurements and computer-related activities of the State Corporation Commission (SCC). As you recall, JLARC staff were originally notified of concerns related to SCC computer procurement activities early in 1988. This preliminary inquiry was then authorized by the JLARC Chairman. Initial concerns related to development of the Corporate Information System. As the Corporate Information System project was being researched, other concerns and allegations were heard concerning the Agent's Licensing (LEAP) System in the Bureau of Insurance. Consequently, these concerns were also researched.

The review concludes that the SCC has not violated State procurement laws or regulations. Our preliminary findings do not indicate a need for a full-scale JLARC inquiry into SCC procurement practices at this time.

In response to the 1985 JLARC report on SCC procurement practices, the Commission and staff have made significant progress in establishing a more competitive procurement environment. However, problems were found in three areas which require attention and corrective action.

- First, although specific provisions of the law were not violated, a number of actions associated with the LEAP procurement could lead to the appearance of impropriety or favoritism toward a vendor.

MEMORANDUM
July 14, 1988
Page Two

- Second, a systems audit policy developed by the SCC is inconsistently adhered to. Further, the policy does not appear to be articulated in a manner that provides for the SCC's best interests.
- Third, although the Office of Planning and Development has been growing and developing to address SCC needs, greater attention must be devoted to (1) clear delineation of OPD responsibilities vis-a-vis user division responsibilities, (2) development of consistent and comprehensive computer-related policies and procedures, and (3) improved communications with user divisions and vendors.

As described above, some difficulties concerning computer related operations and procurements were identified through the review. The actual findings were relatively minor in nature compared to the original allegations and concerns expressed to JLARC. There are several reasons why this situation appears to have arisen.

In the past, the SCC relied exclusively on sole source procurement for computer development, and developed a number of long-standing relationships with vendors. Recently, however, the SCC has utilized competitive procurement. At the same time, it has developed a stronger Office of Planning and Development to guide its computer functions. As a result, procurement practices are changing, relationships with some vendors have been severed, internal relationships are shifting somewhat, and SCC staff members must reestablish new relationships with vendors with whom they may not be familiar.

This changing environment can be unsettling to different individuals for different reasons. Consequently, it is imperative that the SCC address the areas outlined above to ensure that all of its actions are justified and in accordance with the spirit and letter of the law, and that this is evident to SCC employees, the vendor community, and others who may be observing the SCC.

To reach the above conclusions, several types of research activities were conducted. Related laws, policies, and regulations were reviewed. Relevant files, records, notes, letters, memos, and other documents were analyzed. Lengthy structured interviews were conducted with individuals both within and outside the SCC. The primary objective of all research activities was to assess SCC compliance with applicable laws, regulations, and policies.

Although each allegation and complaint that was heard was researched, each and every item is not included in this memo. Many complaints were minor in nature and/or unfounded. This memo outlines

MEMORANDUM
July 14, 1988
Page Three

the more serious complaints (some of which were found to be true, while others were unfounded) and other areas where problems were detected.

The memo is organized into three issue areas focusing on:

- The Corporate Information System rebuild,
- The Agent's Licensing System rebuild, and
- General concerns.

Specific allegations and related findings are outlined in each section.

CORPORATE INFORMATION SYSTEM REBUILD

The Clerk's Office of the SCC has regulatory responsibility for corporations which conduct business in Virginia. The Clerk's Office System (COS) was originally created in 1976, and is the primary automated system within the Office. Several other systems are also used by staff.

A rebuild of the Clerk's Office systems was initiated in February 1984 when a contract was awarded for a requirements study and general systems design for a new Corporate Information System (CIS). Arthur Young performed an EDP audit of the preliminary design work, but the rebuild was postponed due to significant changes in statute which had to be implemented in the existing COS by July 1, 1985 and January 1, 1986. Once these changes were made, efforts were revived for the COS/CIS rebuild.

In January 1986, the Department of Information Technology (DIT) granted the SCC permission for distributed processing for the new CIS. A new requirements study and detailed design were completed, and in May 1986 the SCC was delegated authority for CIS hardware procurement. Requests for proposals (RFPs) were issued by the SCC for CIS software development and hardware early in 1987.

During the RFP process and after the project was underway, the SCC was challenged on the appropriateness of its actions through the procurement process. Early in 1988, information was forwarded to JLARC setting forth allegations concerning the CIS software development and hardware RFPs.

MEMORANDUM
July 14, 1988
Page Four

CIS Software Development

Arthur Young was awarded a task order on May 29, 1987 for CIS design revision, development, and implementation. The contract covers the full range of work from project initiation through implementation. Concerns have been raised that the award of this contract to Arthur Young is not consistent with an internal SCC audit policy associated with systems procurement.

The SCC Office of Planning and Development Contract and Procurement Policy Manual, which was originally approved by the SCC on April 21, 1978, and revised on May 15, 1985, requires external audits of system development projects between the general design and detail design/implementation phases. The objective of the audit is to "recommend corrective action to relieve any identified deficiencies which could jeopardize the project."

Further, Section IIID(3) of the 1985 policy manual states that the audit is to be performed by a panel composed of persons who are independent of contractors doing systems development project work for the SCC or who wish to perform such work for the SCC in future projects. In other words, those who do audit work are excluded from project development work. The policy is written very broadly, so that when a person audits a systems development project in a SCC division, he or she is forever prohibited from doing development work in any other SCC division. A similar provision appears in the original 1978 policy manual.

The audit requirement is not a State imposed requirement. The policy has been implemented by the SCC out of a desire to provide for checks and balances in the systems development and procurement processes.

Findings. Prior to award of the May 1987 task order to Arthur Young, Arthur Young had performed two audits related to the COS/CIS system. Arthur Young received a contract to audit CIS development in July 1984. The firm also received a contract in September 1985 to audit planned changes in the COS caused by changes in legislation. The September 1985 audit project concerned the COS project and not specifically the development of the CIS. Although the systems are related, there is enough of a difference between the projects to question if the audit policy is applicable in this circumstance.

However, the July 1984 audit focused on the CIS and would have been performed under the provisions of the 1978 policy. Arthur Young should therefore have been ineligible for the development contract under the restrictions set out in the policy.

MEMORANDUM
July 14, 1988
Page Five

It appears that the SCC has ignored or not applied the audit policy in other instances also. For example, Price Waterhouse was awarded a contract for the Bureau of Insurance's "Surplus Lines Brokers and Agent Licensing System Design and Implementation" (SLB/LEAP) project in February 1988. Price Waterhouse is subcontracting with INTEK for completion of a portion of the project. Mr. Douglas Corkum is the president of INTEK. Mr. Corkum had previously completed an audit of earlier phases of the LEAP project in February 1987. A review of the documentation associated with the audit indicates that this audit should have excluded INTEK from development work on the project.

In another example, Arthur Young was also awarded a contract in November 1985 to audit a proposed design for the LEAP rebuild. The actual system rebuild was delayed until recently, and Arthur Young bid on the final design and implementation contract. Although a competing vendor won the contract, concerns have been expressed that Arthur Young should not have been eligible to compete.

A review of available documentation and policies shows that Arthur Young should have been excluded from eligibility. The prior audit should have eliminated the firm. In an interview with a SCC representative involved in the contract process, the representative stated that Arthur Young was not excluded because he simply forgot that they had done the 1985 audit. Further, a review of the two most recent development RFPs shows that the SCC does not mention the audit exclusion in the RFP. These actions indicate that the SCC does not take the audit exclusion very seriously or intend to enforce it across the board.

As these audit related considerations were reviewed, other problems became evident concerning the audit policy. As previously described, the policy is written very broadly so as to exclude auditors from doing development work anywhere in the Commission. While there may be a reason to exclude the same individual or firm from performing both audit and development/implementation work on the same project or within a single division, the policy as currently articulated appears to be too broad. This could unnecessarily restrict the number of vendors eligible for future projects.

The policy also does not allow for flexibility regarding (1) if an audit is actually needed, and (2) at what stage of the project the audit is to be conducted. The policy specifically states that award of task orders for detailed design and implementation may not be made until an external audit and appraisal of all work accomplished through the General Design phase is completed. The Commission's Director of Administration and Director of Planning and Development indicate that this flexibility is desirable.

MEMORANDUM
July 14, 1988
Page Six

It should be noted that the SCC has recently issued a RFP to find one vendor to perform all required audit work. The selection of a single firm to perform all audits could alleviate some difficulties in this area, but time will be necessary to assess how satisfactory this relationship might be.

Recommendations. The SCC should be commended for attempting to establish internal policies which provide for checks and balances. However, once these policies are established, the SCC must adhere to them. Selective application of the audit policy should cease as continued inconsistent behavior in this area subjects the SCC to criticism and serves as an indication that the SCC is not objective or competitive in the procurement process.

Further, the SCC should consider taking the following actions related to the audit policy:

- Rewriting the audit exclusion section to clarify the circumstances under which an individual or firm is prohibited from development work. This would cover the current difficulties with the contractor/subcontractor situation,*
- Articulating a more reasonable audit/development restriction which would provide for reasonable checks and balances, but not unduly restrict the field of vendors which might be interested in future development work, and*
- Articulating audit restrictions in future development/ implementation RFPs to help ensure that ineligible vendors are appropriately screened out of the process.*

CIS Hardware

With the aid of two consulting firms, the SCC decided to require supportability of the ADABAS database vehicle and NATURAL fourth generation language in the CIS hardware RFP. Several hardware vendors felt that the SCC had insufficient justification for the requirement, and one vendor formally requested that the SCC drop the requirement. The SCC did not drop the requirement and continued with the selection process.

IBM and Digital Equipment Corporation (DEC) both submitted proposals in response to the RFP. A selection committee assessed the proposals in terms of previously established criteria and weights, and determined that IBM was the top offeror. (The IBM proposal scored

MEMORANDUM
July 14, 1988
Page Seven

93.9 out of 100 points. DEC scored 55.95 points.) A Notice of Intent to Award was mailed to DEC and posted on August 3, 1987.

DEC issued a formal protest to the award on August 13, 1987 citing five points. The relief sought by DEC was to "void the Intent to Award to IBM and award properly to Digital Equipment Corporation or void the Intent to Award and re-issue the RFP restating the mandatories." The SCC addressed each of DEC's points in a response on August 24, 1987 and denied the DEC protest.

Findings. The primary concern with the hardware RFP was the ADABAS/NATURAL requirement. A number of vendors felt that the SCC had insufficient justification for making this a mandatory requirement. Review in this area indicates that the SCC had a rationale for the specification, and felt that it was making a decision that met the agency's needs while also providing for competition.

The SCC is undertaking a comprehensive systems rebuild and development program as the bulk of the Commission's systems are close to or beyond the normal period for rebuild. The Strategic Plan for SCC Automated Systems calls for major studies over the next two to four years to evaluate the needs of the major divisions as well as the SCC's core systems. Many of the systems will be interconnected. According to the SCC, it is not possible at this time to predict which systems will be initially implemented on inhouse computer resources and which will be implemented on DIT mainframe resources.

Given these plans, the SCC articulated a number of objectives that it felt were important for long term systems continuity. These objectives included:

- Complete compatibility of database structure and accessibility between new systems,
- Ability to move systems between DIT mainframe and inhouse computer resources,
- Provision of high performance but low support requirements for the database system,
- Wide State acceptance and use of database and development tool,
- Significant pool of adept software consultants, and
- Demonstrated track record for the development vehicle and tool.

MEMORANDUM
July 14, 1988
Page Eight

The primary reason for the ADABAS/NATURAL requirement appears to spring from the long term plan as well as the need for systems interface and DIT back-up. The need for interface logically dictates specification of a common database vehicle. The need for DIT back-up would dictate a vehicle that is available from DIT.

The SCC followed this thought process, and identified four database development vehicles available at DIT. The SCC assessed the four vehicles, and identified ADABAS/NATURAL as the vehicle which best met its objectives and needs. (The rationale for the selection are described in Attachment A.) According to the DIT Manager of Procurement and Contracting, the statements on the SCC's assessment are true except for one item. DIT has never had DB2, although DIT had considered acquiring it at one time.

Section 11-35 of the Virginia Public Procurement Act states the General Assembly's intent that competition be sought to the maximum feasible degree, and that specifications reflect the procurement needs of the purchasing body. The SCC's rationale and overall systems needs appear to support the actions it has taken in this instance. Further, the Director of DIT indicates that procurements must be undertaken with agency needs taken into consideration, and he can not conclude that the SCC has done anything illegal.

Better explanations on the part of the SCC at the beginning of the RFP process could have alleviated some difficulties in this area. The RFP gives very cursory coverage of the SCC's long term plan, and does not explain the rationale for the ADABAS/NATURAL requirement. While the SCC may feel that it has every right to specify this type of requirement, the Procurement Act states that "all procurement procedures be conducted in a fair and impartial manner with avoidance of any impropriety or appearance of impropriety" and that "no offeror be arbitrarily or capriciously excluded." The SCC has an obligation to avoid appearances of impropriety or arbitrary actions, and difficulties were anticipated in this area. The SCC should therefore have made its rationale very clear.

Further, a pre-proposal conference held in March 1987 was set up in an unusual manner. Attendees were requested to submit questions prior to the conference, and the SCC responded in writing after the conference. Those questions were not allowed to be discussed at the conference. A review of the conference transcript shows that interaction at the meeting was quite abrupt and abbreviated. Open discussion at this meeting could again have helped vendors understand the SCC's requirements and needs.

MEMORANDUM
July 14, 1988
Page Nine

Recommendation. In future RFPs, the SCC should ensure that potential bidders understand the SCC's rationale and needs for the project under consideration. This will allow bidders to respond in a more appropriate fashion, and could avert the type of situation which developed with the CIS rebuild.

AGENT'S LICENSING SYSTEM REBUILD

A second major rebuild/development effort at the SCC is currently underway in the Bureau of Insurance (BOI). The project involves a rebuild of the automated Agent's Licensing System (LEAP) and the placement of the Surplus Lines Brokers operations, which are primarily unautomated, into an automated posture. LEAP is the larger and more complicated of the two systems.

According to the SCC's Director of Administration, this project represents approximately one-third of the systems rebuild/development work to be accomplished within the BOI. According to the Strategic Plan for SCC Systems Development, a comprehensive review of BOI's systems was scheduled to be completed by March 1988 and the Bureau's systems are to be upgraded by January 1990.

The LEAP system was implemented in 1978, and rebuilt in 1984 to more adequately address BOI's needs. However, changes in legislation in 1985, 1986, and 1987 related to agent licensure could not be accommodated on the system. BOI had to develop manual processes to carry out some required regulatory functions. Staff within the Bureau began requesting systems modifications in 1986 to eliminate the inefficient manual functions.

Technicraft, a computer firm with long-standing responsibility for BOI systems, received a \$50,500 contract on a sole source basis to perform a legislative revision requirements analysis in 1987, and followed-up with a proposal to complete the revision project for approximately \$460,000. According to the Director of Administration, the SCC Commissioners were concerned about spending nearly a half million dollars on an old system when the system was scheduled to be phased out in two years.

The SCC assessed its options and decided to proceed as quickly as possible with a LEAP rebuild to address staff needs, but to do so in the IBM environment. A RFP was issued on February 10, 1988. Arthur Young and Price Waterhouse responded to the RFP with proposals, and a decision to award the contract to Price Waterhouse was made on March 9, 1988.

MEMORANDUM
July 14, 1988
Page Ten

JLARC received an anonymous letter from a Bureau employee concerning the project. The employee alleged that:

- The BOI is very happy with its old system. In other words, the impetus for systems change was coming from outside the BOI and was not based on Bureau needs.
- The Office of Planning and Development imposed an artificial July 1 project deadline which was unrealistic.
- Rumor had it that the Office of Planning and Development promised Price Waterhouse the new BOI system, even though the steering committee members felt that the Arthur Young proposal was superior to the Price Waterhouse proposal.

An additional allegation was made that concerned the LEAP system in general but did not relate to the LEAP rebuild. It was alleged that INTEK, another computer firm, was charging BOI for maintenance work that was not being performed, and that the Bureau had been forced to sign the related invoices.

A letter was also forwarded to JLARC from a computer vendor concerning the project. The vendor stated that the RFP for the procurement was very unusual. The unusual aspects cited were:

- The due date for proposals allowed two weeks to respond,
- No bidders conference was scheduled, and
- A department-wide needs assessment on which the new system was to be substantially based was not finished until after the proposals were due in.

Similar in general message to the anonymous letter, the vendor's letter also asserted that the winner of the bid process had been predetermined by the SCC, and the unusual aspects of the RFP were artifacts of this predetermination.

Findings

The primary allegation regarding this project is that the winning vendor was preselected. It was not possible to prove or disprove this allegation. Although the SCC did not break any specific provisions of the law regarding this procurement, several actions could lead to the appearance of favoritism toward the winning vendor. Other allegations (that the systems changes were being forced on BOI

MEMORANDUM
July 14, 1988
Page Eleven

and that OPD imposed the project implementation date) were found to be unfounded.

Change Initiated Outside the Bureau of Insurance. Interviews with the Insurance Commissioner and members of the steering committee for the procurement indicate that the Bureau was not happy with its old process and systems, and that the impetus for change came from within the Bureau. There is clear consensus that LEAP and SLB upgrades were long called for and necessary. The Bureau began calling for upgrades in 1986, primarily because of changes in legislation that causes staff to work with an inefficient mixture of automated and manual procedures and records.

While there is consensus that upgrades were necessary, some Bureau staff members who were interviewed stated that they did not see the necessity of moving from the Sperry environment to IBM. They felt the basic Sperry system met their needs. A cost comparison conducted for the SCC, however, showed that the upgrade as well as conversion to the new IBM environment could be accomplished for approximately the same cost as the simple Sperry upgrade. The SCC Commissioners therefore decided to move to the new environment while doing the upgrade.

Imposition of Artificial Project Deadline by OPD. The anonymous letter alleged that the Office of Planning and Development imposed a July 1 implementation deadline for the project. This is untrue for two reasons. First, the RFP does not specify a July 1 implementation date. The RFP states that "requirements must be implemented by July 1988" but does not specify a particular day. The implementation date specified in the contract is July 29, 1988. Second, interviews with BOI and OPD staff indicate that the BOI was responsible for determining the implementation date. BOI staff could not remember exactly why July was decided upon, however. Upon reflection, one staff member thought June 1 may have even been a more meaningful date.

Differences Between Proposals. The anonymous letter also stated that rumor had it that Price Waterhouse was promised the LEAP contract, and that the Arthur Young proposal was far superior to the Price Waterhouse proposal. It was not possible to identify the source of the rumor nor if any promises had been made. It was possible, however, to assess steering committee opinions of the proposals that were submitted.

Interviews and document reviews indicate that the proposals were judged to be very similar. In fact, the numeric rating of the proposals, based on criteria and weights pre-established by the steering committee, was very close. Arthur Young was rated at 82.88,

MEMORANDUM
July 14, 1988
Page Twelve

while Price Waterhouse was rated at 82.67. According to project records, the final decision to award to Price Waterhouse was based on cost and ability to deliver the specified product by the specified date.

Unusual Nature of RFP and Preselection of Winning Bidder.
The LEAP project is a relatively large rebuild project with a contract amount of \$462,000. A review of applicable statutes, regulations, and project documents, as well as interviews with DIT and SCC staff, indicates that the SCC did not break specific provisions of the law with this procurement. However, the Procurement Act states that all procurement procedures are to be conducted without appearance of impropriety, and the SCC's actions in this instance could lead to such an appearance.

The SCC appears to have rushed into the project with very short timeframes and weak justification for a July implementation date. While it appears the BOI desired the system update as quickly as possible, these changes have been needed for several years and processes and procedures (although not optimal) were in place to fulfill statutory requirements. Slippage of the implementation date by several months would not appear to be significant, and in fact, would have taken the BOI beyond its extremely busy agent renewal season which occurs in June and July. Because the winning vendor had recent experience with the department-wide needs assessment, the vendor could have had an advantage over others who were not as intimately acquainted with BOI systems and functions, but who could possibly deliver a quality product given a different amount of time to study the requirements and accomplish the work. The bottom line is that one can question the SCC's motivation in this instance, but facts do not prove that the winning bidder was preselected.

Given the magnitude of the project, a two-week response time is unusual but not out of compliance with the Procurement Act. Section 11-37 of the Act requires at least ten days for receipt of proposal, and the RFP met this minimal requirement. According to DIT, the courts have interpreted this provision in a straight forward manner and have ruled that as long as an agency allows ten days, it is acting in accordance with the law. Other recent SCC RFPs have allowed at least a month for preparation of proposals however. For example, the RFP for the CIS software development allowed eight weeks between the issue date and the due date. Another SCC RFP, to procure the systems audit firm, allowed five weeks for proposal submission.

A pre-proposal conference is not a mandatory requirement under State law or regulation. Therefore the SCC did not violate a law or regulation by not holding a conference. However, the Strategic Plan for SCC Automated Systems indicates that the Commission will

MEMORANDUM
July 14, 1988
Page Thirteen

normally require a pre-proposal conference to permit vendors the opportunity to publicly discuss the requirements of the proposal. Given the magnitude of the project, it appears unusual that a conference was not scheduled.

And finally, issuance of the RFP prior to completion of the Bureau's "Technical Review and Evaluation of Automated Systems," previously referred to as a department-wide needs assessment, also appears to be unusual. About half the document was completed in draft form at the time of the RFP and made available to potential bidders. The report was not completed and finalized until March 4, 1988, nine days after the due date for proposals. Common sense would appear to dictate that the SCC hold off on the due date until completion of the review. It makes sense to give all potential vendors a more complete picture of the Bureau and its needs to ensure the most accurate and complete proposals possible.

Charges for Work Not Performed. Review in this area found the allegation to be unfounded. Unclear policies and procedures and poor communications, in conjunction with poorly defined systems maintenance responsibilities for OPD and user divisions, led at least one BOI staff member to believe that BOI was being charged for systems work that was not performed. Problems with computer policies, responsibilities, and communications will be more fully explained in the next major section of the memo.

Recommendations

The SCC must make all possible efforts to avoid improprieties or appearances of such in its systems procurement activities. Standard procurement practices and conventions, such as reasonable due dates for proposals and conducting pre-proposal conferences, should be utilized in all applicable circumstances. All requirements of RFPs should be fully justified and confirmed with user divisions. And special studies and reviews, such as the Technical Review and Evaluation, should be better coordinated with procurement efforts to provide for timely sequencing of activities, full use of data that is generated and paid for, and the best possible and most timely data for potential bidders.

GENERAL CONCERNS

While researching the two specific procurement issues, other general concerns related to the SCC's computer activities surfaced. These relate to systems policies and procedures, the articulation of

divisional responsibilities for systems procedures and maintenance, and communications.

Policies and Procedures

The SCC has developed some systems-related policies and procedures such as the Office of Planning and Development Contract and Procurement Policy Manual. Additional efforts are necessary, however, to develop comprehensive and non-conflicting computer-related policies that meet the SCC's needs as well as requirements of the Public Procurement Act and the Commonwealth Agency Procurement and Surplus Property Manual. The following case examples illustrate the types of problems that exist.

The SCC has an incident/problem reporting system which is used to report systems problems and to obtain information from maintenance contractors regarding solutions. BOI has consistently followed problem reporting procedures set out in the "State Corporation Commission Standards and Procedures Manual" which was issued on March 23, 1979. The Office of Planning and Development follows another policy entitled "Description of the Current Incident Reporting System." The existence of conflicting policies has led to significant difficulties between BOI and OPD concerning the initiation and approval of maintenance activities and responsibility for the payment of invoices.

The Office of Planning and Development Contract and Procurement Policy Manual outlines a number of basic procedures to be followed by the SCC in the procurement of systems hardware, software, and services. As previously described, sections relating to audits require significant revision to address audit restrictions and applications.

When a SCC division needs to procure systems-related products or services, it works with OPD on the procurement. OPD is responsible for generating the RFP with the user division's input. During a recent procurement, the SCC Commissioners discovered that user divisions did not routinely review the RFP prior to issuance. An understanding has developed that user divisions are to review future RFP's, but this practice has not been articulated in policy.

MEMORANDUM
July 14, 1988
Page Fifteen

The Agency Procurement and Surplus Property Manual is distributed by the Department of General Services and must be used by all State agencies. Section 3.3(2) of the Manual states that when using competitive negotiation, "the factors for use in evaluation of a proposal must be included in the RFP.... Price should be one of the factors considered, but need not be the determining one." The recent RFP for the LEAP project did not list cost as an evaluation factor.

Unclear Articulation of OPD Responsibilities

It does not appear that the responsibilities of the Office of Planning and Development are clearly articulated or understood. During the review, misunderstandings, difficulties, and problems related to responsibility for the following became evident:

- Problem/incident reporting,
- Payment of invoices,
- Hang maintenance,
- Generation of systems policies and procedures,
- Role on steering committees established for vendor selection, and
- Ensuring compliance with procurement policies and regulations.

Actions are necessary to clarify and communicate OPD's responsibilities in these and other areas.

Communication

OPD was created as a staff division within the SCC to assist the line divisions with their automated systems needs. OPD also has significant responsibilities for interacting with vendors and potential vendors on a daily basis. Strong communications, both written and verbal, are necessary to ensure that OPD is as effective as it can be in its role.

Shortcomings with written communications in the form of policies and procedures have been described in this memorandum, and should be addressed by OPD. Other indications exist that verbal communications also require strengthening. OPD should address these areas.

MEMORANDUM
July 14, 1988
Page Sixteen

Recommendations

Several actions are necessary to address the items discussed in this section. First, the SCC Commissioners should take immediate action to clarify the responsibilities of OPD vis-a-vis user divisions. This statement of responsibility should be communicated to all SCC divisions. Second, the Office of Planning and Development should take immediate action to assess current computer-related policies and procedures. Up-to-date and consistent policies should be generated where policies are found to be lacking or existing policies are found to be in conflict. OPD should also act to improve communications with user divisions and vendors.

BAN/rc

Attachment

VIRGINIA STATE CORPORATION COMMISSION
SYSTEMS DEVELOPMENT STRATEGY

The Commission currently runs all its production work on the Sperry 1100/94 mainframe at DIT. The work of the Commission constitutes approximately 45% of the workload on the Sperry system. The systems of the Commission are written in Sperry Cobol, using the proprietary Sperry database system DMS1100. This system is a traditional hierarchal database system with virtually no associated monitoring or development tools, and a complex data definition structure requiring extensive maintenance support. The pool of support personnel in the greater Richmond area who are knowledgeable in DMS1100 is extremely limited.

The application systems of the Commission are in aggregate approximately eight years old, and many of them are close to ten years old. The industry standard for estimated life of automated systems is four to seven years depending upon the volatility of changes to the systems, with the more volatile systems having the shorter life. The bulk of the Commission's systems are therefore close to or well beyond the acceptable period for rebuild. Major studies are planned over the next two to four years for evaluation of the needs of major divisions of the Commission including Motor Carrier, Bureau of Insurance, Bureau of Financial Institutions, Uniform Commercial Code, and the Commission's core support system. At this time, it is not possible to determine the rebuild schedule for these systems, nor to predict which of these systems will be initially implemented on inhouse computing resources and which must in the interim be implemented on the DIT mainframe resources.

The objectives before the Commission are clear. It is necessary to provide a methodology and approach to rebuilding our systems which achieves the primary goals of continuity of development tools and vehicles:

- complete compatibility of database structure and accessibility between new systems
- the ability to move systems between the DIT mainframe environment and the inhouse computer resources
- provision of high performance but low support requirements for the database system
- wide state acceptance and use of the database and development tools
- a concomitant significant pool of adept software consultants

- a demonstrated track record for the development vehicle and tools

It is anticipated that most if not all rebuild and new systems developed will eventually be brought onto the Commission's inhouse computer resources. However, it is quite likely that our ability to provide such inhouse computing power will lag behind our need to rebuild existing systems and construct new ones. We, therefore, expect to see some applications which are initially rebuilt to run on the DIT mainframe until our inhouse capabilities are able to handle the resource demand. This approach recognizes the critical need to address system rebuilds in a timely fashion without being delayed in lengthy procurement efforts for local computing resource solutions.

The first system chosen for this rebuild effort is the Corporate Information System (CIS). The CIS is sufficiently independent of interaction with other Commission systems so as to permit an effective transition from the current expensive mainframe environment to our local environment without substantially impacting the overall computing efforts of the Commission. This is a major reason that the CIS is the first system to be brought inhouse.

DEVELOPMENT AND SUPPORT PRODUCTS
AVAILABLE AT DIT

There are currently four vehicles available at DIT which can be used for the new generation of application system for the Commission. The Sperry environment offers DMS1100, which is currently unsatisfactory to the Commission due to the high maintenance costs, over excessive complexity, lack of adequate development tools and runs only on Sperry equipment.

The IBM environment at DIT offers three vehicles: IMS, DB2, and ADABAS. The first two are proprietary products of IBM and therefore are dependent upon IBM machines. Both products also require extensive system programmer support. IMS is well established and has extensive development tools, but is expected to eventually be replaced by DB2. The DB2 product had an excellent future, but has been poorly accepted by the DP community, primarily due to the lack of a complete set of support tools, and lack of a data dictionary which is a critical component of a database system. In addition, no associated fourth generation language is available for DB2, and no other state agencies have a significant track record with the product.

The third product available in the DIT IBM environment is ADABAS. This product is a machine independent database vehicle with an integrated fourth generation language (NATURAL) with an excellent reputation. The product is capable of supporting multiple simultaneous database access for both computer (node) to computer (node) read and write, has limited systems support requirements and may be ported among the five hardware vendor environments on which it runs by simple recompilation of the source code. It is currently being used by twelve state agencies and is supported by DIT. This product is the only viable, machine independent integrated database and development product currently supported by DIT which permits both machine independence and the ability to link multiple databases together on multiple machines using the same development language, regardless of the machine environment.