

In re filing of NEVADA BELL'S Unbundled  
Network Element (UNE) Cost Study.

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At a general session of the Public Utilities Commission of Nevada, held at its offices on January 29, 1999.

**PRESENT:**

Chairman Judy M. Sheldrew

Commissioner Donald L. Soderberg

Commission Secretary Jeanne Reynolds

**ORDER**

The Public Utilities Commission of Nevada ("Commission") makes the following findings of fact and conclusions of law:

**INTRODUCTION<sup>(1)</sup>**

**Procedural History:**

1. On June 1, 1998, Nevada Bell filed its UNE cost study, designated as Docket No. 98-6004, with the Public Utilities Commission of Nevada ("Commission"). This filing was made pursuant to Chapters 703 and 704 of the Nevada Revised Statutes and the Nevada Administrative Code ("NAC") and the Commission's Amended Procedural Order of April 30, 1998, in Docket No. 96-9035. Nevada Bell believed that portions of the cost study contain proprietary information and requested that they be treated as proprietary pursuant to NAC 703.527 et seq.
2. On June 8, 1998, the Commission issued a Notice of Filing and Notice of Prehearing Conference. On June 19, 1998, the Commission held a Prehearing Conference in this matter.
3. On June 17, 1998, AT&T Communications of Nevada, Inc. ("AT&T") filed a Petition for Leave to Intervene. On June 18, 1998, the Attorney General's Bureau of Consumer Protection - Utility Consumers Advocate ("UCA") filed a Notice of Intent to Intervene with the Commission. On June 19, 1998, the Central Telephone Company - Nevada d/b/a Sprint of Nevada ("Sprint") orally submitted a Petition for Leave to Intervene. On July 13, 1998, the Commission granted AT&T and Sprint leave to intervene.
4. On July 1, 1998, the Regulatory Operations Staff ("Staff") of the Commission submitted a Motion for an order from the Commission directing Nevada Bell to file a cost of capital study for review and analysis and eventual use in setting the appropriate costs and/or prices for unbundled network elements ("UNEs"). On July 8, 1998, the UCA filed a Response in support of Staff's Motion. On July 9, 1998, Nevada Bell and Sprint filed responses in opposition to Staff's Motion. On July 22, 1998, the Commission issued an Order Denying Regulatory Operations Staff's Motion.

5. On July 6, 1998, the Commission issued a Notice of Hearing in this matter for August 10, 1998. The Notice also established a procedural schedule whereby Nevada Bell's rebuttal testimony was to be filed with the Commission no later than July 15, 1998.
6. On July 8, 1998, Nevada Bell filed a Motion for Extension of Time requesting an extension of the July 15, 1998, filing date to July 17, 1998. On July 13, 1998, the Commission issued an Order Granting Motion for Extension of Time.
7. On August 10, 1998, the Commission commenced a hearing in this matter. The hearing lasted eight days covering 1,228 pages of transcript and 36 exhibits. Portions of various witnesses' prepared testimony were stricken in response to motions to strike as reflected throughout the transcript.
8. Staff's motion for order directing Nevada Bell to file prices was denied. (Tr. at 4-31.)
9. Nevada Bell requested confidential treatment for various portions of its filing. Accordingly, the Commission conducted closed sessions for part of this proceeding. Nevada Bell set forth as its basis for nondisclosure of this material (at Exhibit 10): (a) that it has legal or contractual obligations to protect information which certain entities consider confidential; (b) that disclosure of cost study information to existing and potential competitors would diminish or destroy the value of Nevada Bell's business; (c) that Nevada Bell may derive actual or potential economic value if certain information is not generally known to the public; and (d) existing or potential competitors could derive economic value from its disclosure or use, to the detriment of Nevada Bell's market base.
10. Pursuant to NRS 703.190, the Commission can only prohibit disclosure of information if it determines that the information would otherwise be entitled to protection as a trade secret or confidential commercial information pursuant to NRS 49.325 or NRS 600A.070 or Rule 26(c)(7) of the Nevada Rules of Civil Procedure. The Commission complied with the requirements of NRS 703.196 by examining this information in closed hearings. No further explanation of why any of the information filed under seal should be afforded confidential treatment was provided in the closed hearings. The testimony elicited during the closed hearings did not actually reveal any information for which nondisclosure was requested. Accordingly, the transcripts of the closed hearings should be made part of the open record. As to the prepared testimony and attachments themselves, upon consideration of the arguments advanced by Nevada Bell and the testimony elicited during the closed hearings, the Commission finds that Nevada Bell has not met its burden in this regard and that its request for confidential treatment should be denied. The Commission notes that the inputs to the HAI model and outputs from the model were to be subject to public scrutiny. Cost information of a regulated entity should not, generally speaking, be entitled to confidential treatment; such information should be open and available to the public. The information for which Nevada Bell has requested confidential treatment consists of forward-looking costs. Nevada Bell set forth as one of its reasons for confidential treatment that it is under certain obligations to protect information. The Commission is under no similar obligation. In fact, the Commission must disclose all information unless it is convinced that the information constitutes a trade secret or commercially sensitive information. The other arguments raised by Nevada Bell would serve to defeat the overall purpose of using the HAI model.

### **Statutory History:**

1. On February 8, 1996, the President of the United States signed into law the Telecommunications Act of 1996 (Act). This law promotes development of competition in the telecommunications industry, particularly in the provision of local exchange services. The Act requires all states to allow competition in previously protected local exchange markets. As part of this process, each state regulatory commission must develop pro-competition rules in accordance with the guidelines that are established by the Federal Communications Commission (FCC).
2. Pursuant to Section 252(b)(1) of the Act, if the parties to an interconnection arrangement are unable to reach agreement on the terms and conditions for interconnection, a requesting carrier may petition its state regulatory commission to arbitrate any unresolved issues by voluntary negotiation. A number of companies were unable to reach complete agreement with Nevada Bell, and exercised their right to arbitration, pursuant to Section 252(b)(1) of the Act.
3. On August 1, 1996, the Federal Communications Commission (FCC) adopted rules to implement the local competition provisions of the Act ("FCC Interconnection Order").<sup>(2)</sup> As the FCC notes in its Order at paragraph one:

The Telecommunications Act of 1996 fundamentally changes telecommunications regulation. \* \* \* In the new regulatory regime, we and the states remove the outdated barriers that protect monopolies from competition and affirmatively promote efficient competition using tools forged by Congress.

And, further, at paragraph three:

[W]e are taking the steps that will achieve the pro-competitive, deregulatory goals of the 1996 Act. The Act directs us and our state colleagues to remove not only statutory and regulatory impediments to competition, but economic and operational impediments as well.

In this proceeding, we continue the task of addressing economic and operational impediments to competition.

## DISCUSSION

1. In this Order, we use many technical terms, from both the cost modeling discipline and the telecommunications industry generally, and provide at *Appendix B -- Definitions* to this Order a glossary of terms and their meaning.
2. This proceeding is conducted essentially under our statutory authority to set prices for interconnection, and unbundled network elements. The permanent pricing decisions which result from this proceeding must comport with the applicable cost and pricing standards set forth in the Act.
3. Just and reasonable rates for interconnection<sup>(3)</sup> and unbundled network elements are to be based upon the cost of providing interconnection or the network element. The cost is to be determined without reference to a rate-of-return or other rate-based proceeding. The prices established may include a reasonable profit. 47 U.S.C. § 252(d)(1)(A).
4. The FCC's Interconnection Order provides guidance on many costing and pricing issues, but its recommendations are largely non-binding. *Iowa Utilities Board v. FCC*, 120 F.3d 753 (8th Cir. 1997). The FCC has provided valuable guidance for the costing of unbundled network elements. In its Order, the FCC stated that total element long-run incremental cost (TELRIC) should be used to estimate the cost of unbundled network elements. The analysis is explained in paragraphs 674-740 of the FCC's Order. All parties in this case advocate the TELRIC methodology as the appropriate costing analysis.
5. The TELRIC methodology 1) assumes the use of best available technology within the limits of existing network facilities; 2) makes realistic assumptions about capacity utilization rates, spare capacity, field conditions, and fill factors; 3) employs a forward-looking, risk-adjusted cost of capital; 4) uses economic depreciation rates for capital recovery; and 5) properly attributes indirect expenses to network elements on a cost-causative basis. See, for example, FCC Interconnection Order at 12.
6. By following these cost principles, a cost floor that reflects the prospective economic costs incurred by an efficient supplier is established for each network element. In this proceeding, the cost will be used to set the price for the network element. Historically, the justness and reasonableness of regulated rates has been judged, in part, with reference to the cost-of-service. Martin G. Glaeser, *Public Utilities in American Capitalism* (New York: Macmillan Company, 1957), p.196.
7. Economic efficiency dictates that the cost floor be established in a manner which maximizes society's welfare and is consistent with the Act's requirement that the rates be just and reasonable. We will set interim prices for unbundled network elements in this proceeding. Setting economically efficient prices will provide the right signal to competitive local exchange carriers (CLECs). Most importantly, it will help them in making their decision either to construct their own network or to lease facilities from the incumbent local exchange carrier (ILEC). If the price of an unbundled network element is set too high, a CLEC may build facilities when society's scarce resources would be better employed if it had rented facilities from the ILEC. On the other hand, if the price of unbundled network elements is set too low, a CLEC may rent facilities from an ILEC rather than build. This would reduce society's well-being, because the least cost supplier is not the one who is building and maintaining the network facilities. In order to maximize society's welfare, resources should be directed toward the supplier that can construct a network at the lowest cost to society.
8. In reaching its conclusions in this Order, the Commission was unable to rely on the information presented by Nevada Bell. Nevada Bell did not offer any pricing proposals. Nevada Bell's own witness admitted that she was not offering any proposals on how costs could be used to arrive at any prices or pricing methodologies. (Tr. at 79, 96, 105, 126.) As discussed later, AT&T manipulated certain data. The Commission must therefore rely heavily on Staff's presentation for its decision.

## COST METHODOLOGY: PRINCIPLES

1. The objective of this proceeding is to establish prices for unbundled network elements based on the pricing and costing procedures adopted by the Commission.
2. We previously have observed the importance of establishing appropriate costing and pricing levels. For consumers to have competitive choice, the ILECs' networks must be opened up at terms that are fair to both ILECs and new entrants. A key part of that process is determining the costs and prices for services.
3. An analytical model is a simplified representation of some aspect of the real world. Analysts use models to organize the complexity of the real world into some orderly form. Models are, by definition, simplifications or abstractions which omit some information. A model can be a very powerful analytical tool. It can act as a microscope or a telescope which may enable the analyst to focus in on the key aspects of a situation and thereby solve problems that, in the absence of a model, would be hopelessly complex.
4. The analytical model on the record in this case is a computer model designed or used to estimate the cost of constructing and operating the public-switched telephone network. That network is exceedingly involved and complex. It encompasses millions of access lines and hundreds of switches, interoffice transmission facilities,

signaling links, and other elements. Cost models are used to sort through the complexity of that network. They help to organize it into similar elements that have similar costs, and to estimate the cost of those elements. Cost models lend themselves to two basic purposes. First, they can be used to measure the cost that would be incurred should it be necessary to reconstruct the network under certain specified conditions, such as the "scorched node" assumption. Second, they can be used to disaggregate the otherwise undifferentiated costs of the network into various element costs, so that the price of a loop can be separated from the price of a switch, and the cost of a 10,000-foot loop in an exchange of a certain size can be separated from the cost of a 10,000-foot loop in an exchange of different size. In other words, one might use a model to estimate what it would cost to build a portion of the network or to rebuild the entire network.

5. The parties basically agree that the cost levels established should be based upon open, reliable, and economically sound cost models and cost inputs. There is also basic agreement that costing should be performed in sufficient detail so that the resulting prices would lead to economically rational entry decisions by competitors, as well as efficient utilization of the incumbent local exchange company's network. Such a policy would ensure that prices are set neither too high nor too low, which would best serve the public interest. We note the parties concur regarding the criteria for this costing exercise, but also we note that there is disagreement among the parties over the degree to which the filed cost studies satisfy these criteria.
6. We believe that an open model is in the public interest in that it provides all parties with an opportunity to fully explore the advantages and the limitations of the cost model. Furthermore, we believe that models should be open in order for the public to have the opportunity to evaluate the information which is used to set rates.
7. In judging the soundness of the cost inputs, we believe that the inputs must be realistic, accurate estimates of all of the costs a provider would incur if it built out a new network using the least cost, forward-looking technology.
8. A forward-looking cost model does not measure the embedded cost-of-service. The model should estimate the economic or prospective costs of providing services or elements. FCC Interconnection Order at ¶¶ 704-707.
9. Forward-looking cost measurements require capturing the future costs of network facilities. The use of current wire center locations, along with the most efficient technology available to determine forward-looking economic costs, is the approach that most reasonably balances the interests of ILECs, CLECs, and consumers. ILECs need prices that will recover their forward-looking economic costs. CLECs need to be provided with the opportunity to compete on an equitable basis with the ILEC. Consumers benefit most when there is facility-based competition.
10. Based upon the evidence presented in this case, we conclude that the HAI model adopted for use in this proceeding establishes a reasonable range of forward-looking costs that can be used for prices.
11. We concur with the parties that the inputs to the cost model need to be validated.

## **OPERATIONAL SUPPORT SYSTEMS COSTS**

1. The Act requires ILECs to modify their networks so that CLECs may obtain such items as unbundled network elements and wholesale services through operational support systems (OSS). ILECs claim that the Act has compelled them to pay for unplanned network upgrades. The term "transition costs or start-up costs" is used to characterize any expenditures that ILECs make to their networks in order to comply with the statutory requirements of the Act.
2. In this Order, we do not rule on issues related to the recovery of transition costs. Instead, we have reserved our findings on certain topics until this matter is more fully explored. Nevertheless, we do find certain areas in which ILECs are entitled to compensation for their transition costs.
3. Staff's witness Ms. Dismukes recommended that the Commission reject the OSS study proffered by Nevada Bell because it is not specific to Nevada. (Exhibit 27.) The Commission agrees that Nevada Bell's study should be rejected and that Nevada Bell should be directed to file a new OSS cost study to incorporate Nevada specific inputs and to reflect prices for both fully automated and manual OSS.

## **COST OF THE LOOP**

### **A. Outside Plant Placement Costs and Structure Sharing**

1. Much of the testimony in this case focused on the cost of providing a loop. Parties disagreed about such issues as the appropriate level of inputs and network design. We begin our evaluation of loop costs with an analysis of the testimony on outside plant placement costs and structure sharing.
2. Placement costs are the costs to install outside plant facilities. The cost of placing facilities is affected by the extent to which these costs are shared with other utilities. For example, if electric, cable television, and telephone

cables are placed in the same trench, the cost of opening up the ground would be shared by the different utilities. This sharing would reduce the cost of placing telephone cables.

3. AT&T's placement costs inputs were developed by a team of engineers along with information collected from outside plant contractors. Nevada Bell developed company specific input values. Staff incorporated the results of the Gabel Kennedy Study in its inputs.
4. AT&T provided a number of outboard calculations in this proceeding. However, little weight was granted those calculations since no support was offered or filed with the Commission even after a request was made by the Commission for AT&T to file the details of the calculations and support documentation.
5. The Commission adopts Staff's proposed inputs. We find that the values are consistent with Staff's recommended values presented to the Commission in Docket Nos. 97-5018 and 96-9035 in which we adopted inputs. We have had no evidence presented to give us reason to change from our previous position.
6. The Commission believes that the method used by AT&T to collect data from vendors was flawed.

## **B. Fill Rates**

1. The fill rate is the actual usage of the network relative to its total capacity. Fill is used to calculate per unit costs.
2. The FCC has stated that the calculation of the total element long-run incremental unit costs should be based upon reasonably accurate fill factors. According to the FCC, "the per-unit costs associated with a particular element must be derived by dividing the total cost associated with the element by a reasonable projection of the actual total usage of the element." FCC Interconnection Order at ¶682.
3. We reaffirm our adoption of the HAI default fill rates.

## **C. Four-Wire Loop**

1. The parties also disagree about the additional cost associated with providing a four-wire loop. An ordinary loop requires the use of only two wires, or one pair of cables.
2. AT&T has assumed that the investment for a two-pair cable is 60 percent greater for a four-pair cable.
3. This assumption is inconsistent with the argument that the incremental cost of providing an additional pair of wires to a subscriber is lower since a significant portion of the cost of the loop is associated with labor costs that are independent of the size of the cable.
4. The HAI model does not report the difference in the cost of providing a two-wire versus a four-wire loop. AT&T failed to show adequate support for its multiplier.
5. Based upon the evidence of record, we find that the cost of a four-wire loop may be greater than a two-wire loop. However, no support was provided to determine the additional cost.
6. We do not adopt any additional cost for providing a four-wire loop. However, any interested party remains free to petition the Commission to implement pricing to reflect additional costs.

## **D. Cable Size/Lengths and Fiber/Copper Breakpoints**

1. One of the inputs to the loop model is the distance at which fiber or copper cable is used in the network. The Hatfield Model assumes that on a forward-looking basis, the crossover point should be at 9,000 feet from the central office and maximum copper in the loop of 18,000 feet.
2. In the HAI model, the selection between these two technologies is based upon the total length of feeder cable from the wire center to the serving-area interface.
3. The Commission reaffirms its adoption of HAI's default inputs. These values were presented to the Commission in Docket Nos. 97-5018 and 96-9035 in which we adopted inputs. We have had no evidence presented to give us reason to change from our previous position.

## **E. Capital Factors; Cost of Capital; and Depreciation**

1. The investments identified by the model are converted to a monthly cash-flow requirement through the application of annual charge factors. Depreciation and the cost of capital are two components of the annual charge factors.
2. We adopted a weighted cost-of-capital input of 11.25 percent in a previous proceeding and will apply this rate in this proceeding. This is the rate also authorized by the FCC.
3. Under the pricing standards set forth in Section 252(d)(1) of the Act, the rates charged for interconnection and

unbundled network elements must be "based on the cost (determined without reference to a rate-of-return or other rate-based proceeding) of providing interconnection or network elements . . . nondiscriminatory . . . and may include a reasonable profit." The FCC recognized that the appropriate depreciation rate to be included in a TELRIC analysis is a forward-looking, economic depreciation rate. Economic depreciation is defined by the FCC as the "periodic reduction in the book value of an asset that makes the book value equal to its economic or market value." FCC Interconnection Order at ¶703, footnote 1711.

4. We reaffirm our adoption of the most recently approved depreciation lives and salvage values established by the Commission.
5. As noted above in the procedural history for this docket, on July 22, 1998, the Presiding Officer at that time issued an order which denied Staff's request that Nevada Bell be directed to file a new cost of capital study. That decision was an interim ruling which denied the request as untimely and on the basis that no justification for consideration of a new rate of return had been shown. Information in this record, however, raised the issue of whether the default cost of capital is an accurate indicator of today's capital rates. Therefore, upon consideration of the full record developed in this case, the Commission believes that it should revisit this issue and order Nevada Bell to file, within three months of the date of issuance of this Order, a new cost of capital study.

## **F. Expense Factors**

1. The Hatfield Model estimates some expenses based upon expense-to-investment ratios derived from the ILEC's ARMIS reports. For example, if historically there is five cents of maintenance expense for every dollar invested in buried cable, the Model assumes that prospectively the same ratio would hold in the future. When certain expenses are deemed more sensitive to the number of customers, expense factors take the form of ARMIS expense divided by ARMIS reported number of lines.
2. Commission Staff recommended some adjustments to the HAI default expense inputs.
3. We conclude that, based upon the evidence of record in this proceeding, Staff's adjustments to the HAI default expense inputs should be adopted.

## **G. Joint, Shared, and Common Costs**

1. Joint, shared, and common costs are expenses that are not attributable to a particular service, nor to a family of products.
2. The FCC defines joint and common costs as follows:

Certain types of costs arise from the production of multiple products or services. We use the term "joint costs" to refer to costs incurred when two or more outputs are produced in fixed proportion by the same production process (*i.e.*, when one product is produced, a second product is generated by the same production process at no additional cost). The term "common costs" refers to costs that are incurred in connection with the production of multiple products or services, and remain unchanged as the relative proportion of those products or services varies (*e.g.*, the salaries of corporate managers). Such costs may be common to all services provided by the firm or common to only a subset of those services or elements. If a cost is common with respect to a subset of services or elements, for example, a firm avoids that cost only by not providing each and every service or element in the subset. For the purpose of our discussion, we refer to joint and common costs as simply common costs unless the distinction is relevant in a particular context.

CC Dockets 96-325 and 96-98; CC Docket 95-185 (August 8, 1996), ¶676.

1. Shared costs are expenses that are common to a family of products but are not avoided if one of the products is eliminated. Common costs are shared costs where the family of products is the total operations of the firm.
2. The HAI model allocates common costs by applying a 10.4 percent fixed allocator to the directly attributable forward-looking costs.
3. The Commission finds that a factor of 10.4 percent should be added to the TELRIC loop estimate to account for costs that are not attributed to particular unbundled elements, but are nevertheless part of a proper TELRIC analysis.

## **COST OF SWITCHING**

### **A. Cost Structure**

1. The Hatfield Model computes switch investment on a per-line basis.
2. In defining the switch element, the FCC concluded: "Thus, when a requesting carrier purchases the unbundled local switching element, it obtains all switching features in a single element on a per-line basis." FCC Interconnection Order, ¶412. The FCC's definition of the switch element and that portion of its First Report and Order cited above remain in full force and effect. *Iowa Utilities Board v. FCC*, 120 F.3d 753 (8th Cir. 1997) (Eighth Circuit decision).
3. We do not rule out the possibility that in some future proceeding, a separate charge for vertical features could be established. For example, a party may be able to show through regression analysis that the investment per line, all else remaining equal, is higher at locations where a centrex-type service is provided. The analysis could provide useful insight into the question of the degree to which vertical services require more investment than ordinary voice services.

## **B. Cost Levels**

1. The HAI model proposes that switching investment per line be estimated by analyzing four data points. The investment per line for the regional Bell operating companies (RBOCs), GTE, and the independent LECs was derived from the Northern Business Information (NBI) publication, *U.S., Central Office Equipment Market: 1995 Database*. A fourth value for large switches of 80,000 lines was developed from an unnamed industry source. The number of central office lines was obtained from ARMIS data.
2. We adopted Staff's fixed and per-line switching investment recommendations in previous proceeding 96-9035 to be used as defaults in place of the HAI default inputs. Staff's recommendations incorporated the results of the Gabel Kennedy Study.
3. The Commission adopts Staff's proposed inputs. We find that the values are consistent with Staff's recommended values presented to the Commission in Dockets 97-5018 and 96-9035 in which we adopted these inputs. We have had no evidence presented to give us reason to change from our previous position.

1. The HAI model assigns 70 percent of the cost of switching to traffic and the remaining 30 percent to the port.
2. Staff recommended that 58 percent of the cost of switching be assigned to traffic.
3. We adopt Staff's input that assigns 58 percent of the cost of switching to traffic.

## **NONRECURRING COSTS**

1. Nonrecurring costs historically are classified as costs incurred in initially establishing service for an individual customer. They are transaction related. Costs incurred to set up a customer's service typically include customer service expenses and, depending on the service, the cost of physically connecting a customer to the network. Today, in some cases, the establishment of service can be accomplished from a computer work station, without physical rearrangement of the facilities necessary to serve the customer. Nonrecurring costs are typically recovered, at least primarily, through nonrecurring charges, which the customer pays at the time that service is initiated.
2. We note that, even if transaction costs are captured by the HAI model, these costs should not be included in the cost estimates of unbundled network elements. Staff criticized the non-recurring charges proposed by Nevada Bell as excessive and not in compliance with a previous ruling by the Commission. Staff's witness Ms. Dismukes testified that Nevada Bell failed to include charges for ordering with fully automated OSS. Also, Nevada Bell has provided non-recurring charges only for stand-alone offerings, when certain services, such as a visit by a technician to a customer's premises, can cover more than one other service. Nevada Bell failed to propose non-recurring charges for other than new installations. Its estimates for time needed to perform work were not accompanied by supporting documentation. We adopt the position that nonrecurring costs should be explicitly identified in a separate study.
3. At this time, the Commission should adopt Staff's recommended non-recurring charges. In addition, Nevada Bell should be ordered to submit new non-recurring charges for consideration by the Commission and any interested parties.

## **COMMISSION CONCLUSION**

1. The Act requires that the price of unbundled elements be just and reasonable. In this proceeding, we have identified the recurring and nonrecurring cost of network elements. Consistent with the statutory requirement,

these costs have been determined without engaging in a rate case. 47 U.S.C. § 252(d)(1)(A).

2. For the most important network element, the local loop, our cost determination is based upon an extensive review of the HAI model and the written and oral testimony of many expert witnesses. We have evaluated the input values for the model.
3. The parties have proposed a wide range of inputs for the cost model. Our Order reflects a careful review of all the testimony and exhibits. We believe that, through this process, we have succeeded in identifying inputs and obtaining TELRIC estimates that are consistent with the principles that were identified in the introductory section of this Order.
4. Appendix A provides an outline of the adjustments the Commission adopts in this proceeding.
5. Having discussed above in detail both the oral and documentary evidence concerning all material matters, and having stated findings and conclusions in each numbered paragraph, the Commission now augments those findings and conclusions with the following general statements on the evidence of record. Those portions of the preceding detailed findings and conclusions pertaining to the ultimate decisions of the Commission are hereby incorporated by this reference.

## **FINDINGS OF FACT**

1. The Commission is an agency of the state of Nevada, vested by statute with authority to regulate rates, rules, regulations, practices, accounts, securities, and transfers of public service companies, including telecommunications companies.
2. Nevada Bell is engaged in the business of furnishing telecommunications service within the state of Nevada as a public service company.
3. The purpose of this proceeding is to establish rates for unbundled network elements and nonrecurring charges.
4. The costs established by this Order will serve as prices for unbundled network elements and nonrecurring charges.
5. The nonrecurring charges shall remain in effect until the Commission has rendered a decision on a new cost study to be filed by Nevada Bell.
6. Nevada Bell will file new studies for OSS and non-recurring charges with the Commission within six months from the date of this Order.
7. The HAI model is relatively open, although it uses data not in the public domain.
8. Incumbent local exchange companies may be entitled to some compensation for certain expenditures made to comply with the Telecommunications Act of 1996.
9. The Commission finds it is appropriate to deaverage costs for unbundled loops into three zones for the pricing of UNEs in this proceeding.
10. The Commission finds it is appropriate to combine the loop and NID for no additional charge.
11. The Commission finds it is appropriate that charges to combine other UNEs should be negotiated between the parties.
12. Based upon our findings, those charges proposed by Commission Staff for non-recurring charges are adopted on an interim basis.

## **CONCLUSIONS OF LAW**

Having articulated the legal basis for its decision in the Discussion section, the Commission makes the following conclusions of law.

1. The Nevada Public Utilities Commission has jurisdiction over the subject matter of these proceedings and the parties.
2. An open or transparent model is in the public interest in that it allows a full exploration of the advantages and limitations of a model and allows the public to evaluate all of the information which is used to set prices.
3. The Commission has previously adopted the HAI model which meets our objectives that the model be open, reliable, and economically sound.
4. In future Commission proceedings, parties are required to document all assumptions, inputs, and values consistent with this Order and to reflect forward-looking technology and the cost of such facilities.
5. The proper cost standard is total element long-run incremental cost, and the cost for unbundled network elements should be based upon the cost of the total demand for the elements.
6. The charges recommended by Commission Staff for unbundled network elements and non-recurring charges should be incorporated in Nevada Bell's interconnection agreements.

7. OSS transition costs should be considered.
8. The Commission believes this Order is a seminal event in the implementation of the Act. This Order accomplishes the Commission's goal of establishing unbundled network elements prices. These prices will apply to agreements approved by the Commission in various arbitrated, negotiated, and adopted agreements executed by Nevada Bell, and various new entrant competitive local exchange companies (CLECs), and to all such future agreements executed between Nevada Bell and CLECs authorized to provide local exchange service in the state of Nevada.

THEREFORE, based on the foregoing findings of fact and conclusions of law, it is hereby ORDERED that:

1. The Commission adopts Staff's inputs for distribution, feeder, switching and expenses as inputs to the HAI model.
  2. The Commission adopts Nevada Bell's three rate zones proposal for establishing prices.
  3. The Commission adopts the position that the loop and NID can be combined at no additional charge.
  4. The Commission adopts the position that charges for combining other UNEs will be negotiated by the parties.
  5. Nevada Bell's request for confidential treatment of material filed under seal in this docket is denied.
  6. The Commission adopts Staff's recommended non-recurring charges.
  7. The Commission orders Nevada Bell to file a new non-recurring charge study.
  8. The Commission orders Nevada Bell to file a new OSS study using Nevada specific costs and to reflect charges developed for both fully automated and manual OSS. In addition, the study will reflect currently approved depreciation rates and salvage values, and a cost of capital of 11.25 percent.
  9. Costs for unbundled network elements will be deaveraged into three zones in this proceeding.
  10. The loop and NID will be combined at no additional charge.
  11. The charge for combining other UNEs will be negotiated between the parties.
  12. Nevada Bell is ordered to implement the charges adopted by the Commission in this proceeding.
  13. Nevada Bell is ordered to file a new non-recurring charge study within six months of the date of this Order.
  14. Nevada Bell shall file a new cost of capital study within three months of the date of issuance of this Order.
  15. The Commission retains jurisdiction for the purpose of correcting any errors which may have occurred in the drafting or issuance of this Order.
1. Due to the technical complexity of the economic cost models we investigate in this proceeding, the sheer volume of qualitative and quantitative assumptions, inputs, and values we analyze and address, and the scope and breadth of our decision, each separately numbered paragraph of our Order constitutes a Commission finding. We augment those findings by a series of general findings at the end of this Order.
  2. *In the Matter of the Implementation of the Local Competition Rules of the Telecommunications Act of 1996*, CC Docket 96-98, First Report and Order (August 8, 1996), Appendix B - Final Rules.
  3. The term 'network element' means a facility or equipment used in the provision of a telecommunications service. Such term also includes features, functions, and capabilities that are provided by means of such facility or equipment, including subscriber numbers, databases, signaling systems, and information sufficient for billing and collection, or used in the transmission, routing, or other provision of a telecommunications service. 47 U.S.C. §153.

By the Commission,

JUDY M. SHELDREW, Chairman and Presiding Officer

DONALD L. SODERBERG, Commissioner

Attest: JEANNE REYNOLDS, Commission Secretary

Dated: 2/1/99 Carson City, Nevada

## APPENDIX "A"

### *Adjustments to the HAI model inputs*

Switching Inputs	> Adopt Commission Staff's adjustments.
Feeder Inputs	> Adopt Commission Staff's adjustments.
Distribution Inputs	> Adopt Commission Staff's adjustments.
Expense Factor	> Adopt Commission Staff's expense factor adjustments.
Structure Sharing	> Adopt Commission Staff's sharing assumptions.

## APPENDIX "B"

### Definitions

TERM OR ACRONYM	ACRONYM DESCRIPTION	DEFINITION
AD4	&NBSP;	Electronic equipment used to convert analog to digital voice signals.
annual charge factor	&NBSP;	Annual charge factors are constructed for each investment account. The factors are used to convert an investment value to an annual cash-flow requirement. The cash-flow requirement is the level of annual maintenance, return, depreciation, administrative expenses, and tax expenses associated with a dollar of investment.
ARMIS	&NBSP;	Information reporting system established by the Federal Communications Commission.
carrier serving area interface	&NBSP;	The loop is divided into two sections, feeder and distribution. When digital line carrier is used in the feeder section of the loop, the carrier serving area interface are the facilities that connect the digital line carrier with the copper distribution facilities.
CATV	Cable Antenna Television	Coaxial cable used to transmit television service.
CBG	Census Block Group	Census area of approximately 400 households.
central office	&NBSP;	Synonymous with wire center. Like a wire center, the loop is terminated on a frame in the building.
CLECs	Competitive Local Exchange Carriers	A provider of local exchange service that is not an ILEC. A competitive local exchange carrier is a competitor of, among other firms, an ILEC.
copper cable	&NBSP;	Copper wires that are used to transmit digital or analog signals. The copper wires are contained

		in a plastic sheath.
DACS	Digital Line Carrier	Equipment used to concentrate a number of voice channels on a single pair of fiber optic cable or on two pairs of copper cable.
distribution	&NBSP;	The loop is divided into two sections, feeder and distribution. The distribution facilities are located closest to the customer, while the feeder facilities are closer to the carrier's switching machine.
drop	&NBSP;	Wire that connects a subscriber's premise to the telephone cable that runs back to the telephone company's central office.
DS0	&NBSP;	Transmission of one voice channel at 64 kilobits per second. This is the zero-level signal in the time-division multiplex hierarchy.
DS1	&NBSP;	Transmission of twenty-four voice channels at 1.544 megabits per second. This is the first-level signal in the time-division multiplex hierarchy.
DS3	&NBSP;	Transmission of 672 voice channels at 44.736 megabits per second. In the time division multiplexing hierarchy of the telephone network, DS3 is defined as the third level of multiplexing.
EF&I	equipped, furnished and installed	The total cost of installing equipment. Included in the total cost is both the material cost and the capitalized labor expenditures.
facility	&NBSP;	The equipment used to provide service.
FCC	Federal Communications Commission	Federal regulatory agency responsible for regulating interstate and foreign commerce in communication by wire and radio.
feeder	&NBSP;	The loop is divided into two sections, feeder and distribution. The distribution facilities are located closest to the customer, while the feeder facilities are closer to the carrier's switching machine.
fiber cable	&NBSP;	Tubes that are used to transmit light signals. The tubes are contained in a plastic sheath.
grooming	&NBSP;	Digital line carrier enters a central office at a transmission speed, DS1 or higher, that is faster than the transmission speed of an ordinary voice line. The digital line carrier may be transmitting both retail services and unbundled loops. If the unbundled loop, a DS0 signal, must be directly connected to a CLECs equipment, there is a need to separate, or groom, the unbundled loop from the loops used to provide retail services.
HM (HAI)	Hatfield Model	Cost model that can estimate the cost of providing universal service and unbundled network elements.
ILECs	Incumbent Local Exchange Carriers	On the date of enactment of the Telecommunications Act of 1996, provided telephone exchange service in such areas; and on such date of enactment, was deemed to be a member of the exchange carrier association pursuant to section 69.601(b) of the Federal Communication Commission's regulations (47 C.F.R. 69.601(b)) and on such date of enactment, was deemed to be a member of the exchange carrier association pursuant to section 69.601(b) of the Commission's regulations (47 C.F.R. 69.601(b)).
integrated digital line carrier	&NBSP;	Equipment used to concentrate a number of voice channels on a single pair of fiber optic cable or on two pairs of copper cable. The equipment is "integrated" when the digital line carrier terminates on the local switching machine.
load coils	&NBSP;	Equipment used to amplify weak signals. Load coils have historically been installed on loops that provide service to customers that are located far from the nearest central office.
loop	&NBSP;	Transmission path between the customer's premise and the exchange carrier's main distribution frame or other designated frame or panel in a wire center which serves the customer.
main distribution frame	&NBSP;	The distribution frame in a wire center that is used to interconnect loop cable pairs and line and trunk equipment terminals on a switching system.
NID	network interface device	Equipment at the customer's premise that is the interface between the carrier's loop and the customer's inside wiring.
Replacement cost	&NBSP;	The labor cost of installing equipment.
PNR	&NBSP;	PNR and Associates of Jenkintown, PA is a consulting firm that provided the Hatfield Model sponsors with demographic and geological data.
RUS	Rural Utility Service	Federal agency responsible for maintaining and extending service to rural areas of the country.
SCIS	switching cost information system	Bellcore model used to estimate switching investment levels.
special access	&NBSP;	A non plain-old telephone service line. Special access lines come in many different flavors. For example, a special access line could be a low level data transmission service, such as an alarm, as

		WATS line, or a video-conferencing circuit.
TELRIC	Total Element Long Run Incremental Cost	A measurement of the unit cost of providing a network element. The increment that forms the basis for a TELRIC study shall be the entire quantity of the network element provided.
terminal	&NBSP;	Equipment used to terminate a cable.
UNEs	Unbundled Network Elements	The term network element means a facility or equipment used in the provision of a telecommunications service. Such term also includes features, functions, and capabilities that are provided by means of such facility or equipment, including subscriber numbers, databases, signaling systems, and information sufficient for billing and collection or used in the transmission, routing, or other provision of a telecommunications service. An unbundled network element is a network element that has been separated for other network elements.
wire center	&NBSP;	Building that terminates the loops that connect a customer to a local exchange carrier's switching machine. A wire center serves as an aggregation point on a given carrier's network, where transmission facilities are connected or switched.