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April 20, 2007

VIA HAND DELIVERY AND ELECTRONIC FILING

Debra A. Howland, Executive Director and Secretary
New Hampshire Public Utilities Commission
21 S. Fruit St., Suite 10
Concord, New Hampshire 03301

Re: Northern Utilities, Inc., Docket No. DG 07-033

Dear Ms. Howland:

Enclosed for filing, in the above reference docket, please find an original and seven (7) copies of Northern Utilities Inc.'s ("Northern's") Rebuttal Testimony in response to the Testimony submitted on April 16, 2007, by Mr. McCluskey, on behalf of the New Hampshire Public Utilities Commission Staff. Northern's Rebuttal Testimony is being filed pursuant to the Secretarial Letter dated April 19, 2007, which allowed for a filing extension until April 20, 2007.

Please do not hesitate to call me if you have any questions regarding this filing.

Very truly yours,

Patricia M. French (ass)

Patricia M. French

Enclosures

cc: Kenneth Traum, Office of Consumer Advocate

NHPUC APR20'07 PM 4:14

NORTHERN UTILITIES, INC.
NEW HAMPSHIRE DIVISION

NORTHERN RESPONSE TO STAFF WITNESS MCCLUSKEY

PREFILED TESTIMONY OF
JOSEPH A. FERRO

Q. Please state your name and business address.

A. Joseph A. Ferro, 300 Friberg Parkway, Westborough, Massachusetts 01581.

Q. What is your position with Northern Utilities, Inc. ("Northern" or the "Company")?

A. My position is Manager, Regulatory Policy.

Q. Are you the same Joseph A. Ferro who prefiled testimony in this docket to support Northern's change to the Simplified Market Based Allocator ("SMBA")?

A. Yes, I am.

Q. Please explain the purpose of your prepared testimony at this late stage in this proceeding.

A. According to a procedural order established by the New Hampshire Public Utilities Commission ("Commission"), Staff of the Commission was permitted to file testimony related to issues regarding the calculation of interest on deferred collections of gas costs and recovery of working capital expense associated with purchased gas costs by close of business on Monday April 16, 2007. Northern's response is due this date, Thursday April 19, 2007, and the hearing on Northern's 2007 Summer Period Cost of Gas ("COG") is scheduled for Monday, April 23, 2007.

The purpose of my testimony is to attempt to respond to Staff's testimony, even though that testimony was only delivered two days ago and Northern has had no chance to conduct discovery upon it. Moreover, Staff for the first time raised issues regarding the competency of Northern's accepted working capital study. I am not an expert on working capital, but the Commission's procedural schedule does not permit Northern the ability to address this issue through its expert in this area and lead-lag witness in rate case proceedings, John Skirtich. Accordingly, I will do my best to address Staff's assertions.

Q. Did Northern seek a modification of the schedule in order to address these issues in an orderly fashion?

A. Yes. On April 18, 2007, Northern asked the Commission in an expedited motion to bifurcate the proceeding and permit these issues to be heard as part of their own docket. On April 19, 2007, the Commission denied that motion but permitted the Company an additional day to prepare this testimony.

Q. Please provide a brief history of the cost of gas mechanism in New Hampshire.

A. The cost of gas is a long standing mechanism that is intended to provide Northern recovery of its prudently incurred commodity purchases made on behalf of customers. Northern's Maine Division and Northern's affiliate, Bay State Gas Company, each have a cost of gas recovery mechanism that is calculated exactly the same way as it is for Northern's New Hampshire Division. Moreover, the COG mechanism is the same for all other gas utilities in Massachusetts and New Hampshire, having been approved by each

state commission year after year for decades. In particular, all these mechanisms allow for the recovery of prudently incurred costs associated with providing gas supply service and the recovery or pass-back of carrying costs resulting from the monthly balance of the difference between the incurrence and collection of such costs.

Q. When was the first New Hampshire COG approved by the Commission and implemented by a gas utility?

A. I started working for Northern in 1979, at the time Bay State Gas acquired Northern Utilities. The COG was in place for Northern at that time in substantially the same form then as it is now. At that time, it was not a new mechanism. In fact, cost of gas mechanisms for most gas utilities, including Northern-New Hampshire Division, Northern-Maine Division and Bay State Gas, have been in operation since the early 1970s to track fluctuating gas costs, rather than recover such costs at a test year level in base rates. This need or purpose for this mechanism of tracking variable costs to avoid any earnings fluctuations, i.e., revenue erosion or windfall gains, included the tracking of carrying costs on the fluctuating monthly under or over collections of these gas costs. These monthly under or over collections has always and intentionally been based on the actual supplier metered gas costs and actual metered or as-billed collections. For more specific cites, I am still researching the regulatory background of the mechanism and would like, if necessary, additional time to present this information to the Commission.

Q. What is the substantive and procedural background for Mr. McCloskey's testimony?

A. The McCluskey Testimony describes Staff's initial position as that there "may be"

"significant monthly cost and revenue imbalances" in Northern's (and presumably all other gas utilities') COG rates and that customers may "pay twice" for these "imbalances" through a "rate adjustment" to collect the cost of over- and under-collections and again through a "rate adjustment" to collect working capital. On March 15, 2007, in accordance with the Commission's Order in Docket DG 06-129, Staff filed a "Report" which it stated demonstrated that a change to the long-standing COG was necessary. It stated that Northern (and presumably all other gas utilities) over-collect on the "timing differences" in gas cost recovery.

Q. Do you agree that the Report proved what Staff had indicated was the problem in Docket DG 06-129?

A. Absolutely not. In Docket DG 06-129, Staff persuaded the Commission that a double collection may be taking place. Staff has not demonstrated that any over collection, let alone "double" collection, of Northern's true carrying costs of its monthly position of under or over recovering gas costs has been taking place. While Northern opposed this assertion by Staff, given the long-standing precedent for COG recovery by all the gas utilities, Northern needed more time to examine the issue, and believes all affected stakeholders should also require more time before the commission is asked to consider a change in the operation of this long-standing COG mechanism. In its "Report," Staff seems to recommend that the COG be restarted, in effect, so that the billed revenue calculation should be replaced with accrued revenues.

Q. Do you agree that it is appropriate to replace the COG billed revenue method of

calculation with accrued revenues?

A. No, I do not. I would like to address the inequity and confiscatory effect of that approach in substance and with examples in a moment.

Q. Did Staff only rely on the "Report" in creating its supporting testimony, or did it inject other areas of opposition to Northern's COG?

A. Staff did not simply advocate replacing billed with accrued revenues in the McCluskey Testimony. Staff decided anew to claim that cost to finance Northern's supply-related working capital is inappropriate.

Q. Does the McCluskey Testimony describe work-session and potential settlement discussions that were held between Staff and Northern?

A. Yes, it does. While Northern did indicate to Staff that it expected Staff to maintain the confidentiality of those discussions to aid the freedom of discussion as the parties worked through the issues, apparently Staff decided that it would not keep such discussions confidential.

Q. Do you agree with the manner in which the McCluskey Testimony characterizes the informal discussions between Staff and the Company, as though such discussions constituted Northern's filed position on this matter?

A. No, I do not. I ask the Commission to not give any weight to those pages (pp. 4-6) of the McCluskey Testimony. This is because I think Staff should describe why the current mechanism is incorrect in the face of Northern's claims to the contrary.

Q. Throughout this process, has Staff demonstrated a willingness to justify why it seeks to change a mechanism that is so integral to the stability of Northern's revenues particularly during the critical winter months, and why it believes it was the first after 30 or more years to identify such an obvious issue with the manner in which gas utilities calculate carrying charges on commodity costs of gas?

A. No. Staff has repeatedly demanded that Northern alone justify the COG clause that has been recognized by the Commission for gas utilities to be just and reasonable year after year after year. Moreover, Staff has refused to let Northern hear other gas utility views on the subject, even though Staff has agreed to let KeySpan have this issue heard at a later date. Northern believes the Commission should have the benefit of all of the industry's thoughts on this subject, since the COG is the same for every gas company.

Q. The McCluskey Testimony asserts that Northern proferred a "hybrid" approach or "new analysis" for calculating gas costs that it asked Staff to accept. (McCluskey Testimony on page 5-6). Do you agree with this?

A. No, I do not. What I was attempting to do, on Northern's behalf, was to demonstrate to the Staff the reasonableness of the COG method that has been in place and that the Commission has approved for decades. When – after presentation of this analysis -- Staff continued to demand that Northern justify an existing just and reasonable method of calculating the COG, simply because it found a mathematical, administrative, non-real world justification for reducing Northern's COG collections that did not reflect Northern's actual costs, Northern refused to play ball. Northern continues to believe that Staff must

demonstrate why the existing long-standing rate calculation is unjust.

Q. Mr. McCluskey alleges that Northern's lead-lag study was conducted improperly. *Staff Testimony* at 7, line 7. Is this correct?

A. No. Northern's lead-lag study was reviewed by Staff and the Commission, was not challenged and was approved by the Commission in Northern's 2001 base rate proceeding. The study was prepared properly and accurately. It appropriately measures customer and company behavior in determining the Company's average annual working capital needs.

Q. Was the lead-lag study prepared for Northern's 2001 Rate Case designed to reflect timing changes, volumetric changes in gas use, or other unpredictable changes in the marketplace?

A. No. Moreover, I am informed by John Skirtich, the working capital expert who prepared Northern's 2001 lead-lag study, that a lead-lag study cannot be adjusted for timing differences and differences in billings due to the broad volumetric changes that occur from the summer to winter gas seasons.

Q. Is that important to this discussion as to why the COG contains both a calculation for the over- and under-collection of deferred gas costs in the form of interest collection?

A. Yes. In my view, this may be one reason that the COG was initially constructed in such a way to enable gas utilities to receive interest on the timing difference between actual payments of gas costs and its billings/recoveries.

Q. Is Mr. Skirtich available to present this position to the Commission?

A. Again, although Northern asked the Commission to defer its consideration of this issue, that request was denied. Mr. Skirtich could not be available to fly to Concord NH on such short notice. He is resident of Columbus, Ohio.

Q. In his absence, has Mr. Skirtich provided you with a workable definition of working capital?

A. Yes. Cash Working Capital is that portion of working capital, excluding inventories, that is needed to finance the time period between receipt of payment of utility service and the disbursements required to render that service.

Q. Is every working capital study approached in the same manner?

A. No. As I understand it, there are multiple approaches: the lead lag study, the FERC Formula, and the Balance Sheet Approach.

Q. Please briefly describe the lead lag study approach.

A. Lead lag studies have been the preferred approach in a number of jurisdictions. A lead-lag study measures, in number of days, customers' behavior in paying their gas bills from receipt of service. This lag, better known as the "Revenue Lag," results in a working capital requirement for a regulated company. The study also measures in number of days the regulated company's behavior in paying its expenses in providing service. Generally, the company experiences a cash benefit or "Expense Lead" since most expenses are

incurred by the company in providing service before being paid. The net difference in days is used to calculate the investor capital, as defined above, needed to support this requirement.

Q. How is the net difference reflected in rates?

A. Most jurisdictions include the net working capital as a base rate component of rate base. In the New England, the gas cost component is severed and included in the CGA as a gas cost.

Q. Please continue.

A. The Revenue Lag consists of a meter reading component, a collection component and a billing lag. At times, an availability of cash factor or component is added based on the lag the banks create in making cash available to the regulated company. The meter reading lag represents the midpoint of providing service and is generally calculated by dividing 365 day by 12 months and by 2 to arrive at the midpoint in days or 15.2. The Collection component can be measured in a number of ways; Accounts Receivable Turnover Approach, Bill Sampling and by using Aging Reports.

Q. What approach did Mr. Skirtich use for Northern in its last base rate proceeding?

A. Mr. Skirtich used the more well known Accounts Receivable Turnover Approach to determine its Collection Component, or in other words, the 29.14 days set in DG 01-181.

Q. How is the Collection Lag determined?

A. The Collection Lag is determined by dividing the average daily revenue into the average accounts receivable balance for the test year. Northern used monthly customer accounts receivable balances from the books and records to determine its average accounts receivable balance opposed to daily amounts from its billing system. This approach is simpler and easier to verify while producing reasonable results.

Q. How does Northern derive average daily revenue?

A. Annual per book revenue is quite simply divided by the number of days in the year to arrive at its average daily revenue.

Q. Is this important to Staff's assertion that Northern recovers two times for the timing differences associated with gas cost collections?

A. Yes, it is. The derivation of average daily revenue is a very simple approach which is completely appropriate for determining an average. Average daily revenue is then used to derive the 6.33 net lag days that represent average customer payment behavior. Northern's calculation of average daily revenue, contrary to Staff's assertions, does not reflect the volume and associated revenue lag on a monthly basis irrespective of customer payment behavior.

As a proper complement to the use of this test year net lag days and resulting working capital recovery, Northern's calculation of interest or carrying costs related to the monthly balance of under or over collections does not incorporate any net lag days. Every month the calculation reflects 30 (or 31) days of actual purchased volumes and associated gas

costs and 30 (or 31) days of actual billed volumes and associated gas cost collections. While the net lag days belong in the lead-lag study and resulting working capital calculation, any mismatch in actual costs and revenues due to the "lag" in billing volumes as compared to purchased or sendout volumes belong in the calculation of interest on the monthly under or over collections.

Q. Does it impact Staff's assertion that it is appropriate to insert accrued revenues into the COG calculation rather than billing month revenues?

A. Yes, it does. Staff wants Northern's monthly revenues to be advanced (or "accrued") because billing month revenues on average have been billed to its customers 15 days ago. However, Northern is only billing for (on average) 15 days of service for that month: 1-day for cycle 1, 2 days for cycle 2, and so on, until the end of the month, where service collections would be 30 days for cycle 21. For the other one-half month of revenues, Northern is billing for (on average) 15 days of service for the previous month. The combination of these actual 15-day billings of previous and current month are reflected in Northern's calculation of interest on the monthly under or over collection balance. In the real world and in Northern's calculation of its working capital, as-billed information from the books and records are used to measure the customer behavior. Unbilled (or "accrued") receivables and revenue are not used.

Q. What was the approved billing lag in the working capital for Northern as a result of the Commission's approval in DG 01-082?

A. The sum of the 15.2 days for meter reading and 29.14 days for collection produced the

44.34 revenue lag approved by the Commission in DG 01-182.

Q. Did Northern include every aspect of billing lag in its calculation?

A. According to Mr. Skirtich, the Company took a conservative approach and did not include a billing lag for bill preparation, i.e., the time between reading the meter and sending the bill, which under current operations is just over 1 day. In other words, on average meters read each day are billed each night with some exceptions. This reduced the overall billing lag. According to Mr. Skirtich, Northern's working capital calculation was further simplified for ease of review and did not include a calculation regarding the availability of cash in the revenue lag. This would also reduce the working capital calculation.

Q. Please continue and describe for the Commission the method undertaken in to calculate the expense leads.

A. The Expense Leads particularly the Gas Purchase Lead (39.48) were calculated in a similar manner and were measured from the midpoint of the service period to the date paid to determine average Company behavior in paying its vendors. For gas costs, all invoices for the test year were analyzed.

Q. Did Mr. Skirtich tell you why it was reasonable to calculate working capital in this manner, given his extensive experience in conducting such studies for regulated gas utilities?

A. Yes. The NiSource Energy Distribution Companies, including those distribution companies from the Columbia Energy Group, share a common philosophy in preparing

lead lag studies. The purpose of the lead lag study is to identify the **key** drivers in creating the regulated company's need for cash working capital. To the extent possible, therefore, the company uses its books and records to measure the payment behavior of those key drivers to obtain reasonable net lead lag days. The net days are then applied to the appropriate components of the company's cost of service to obtain a **reasonable** level of cash working capital to include in rate base for recovery of the related carrying costs. In a way, a more detailed approach in preparing the lead lag study and measuring cash working capital creates false precision that generates litigation and produces upward or downward changes that have a relatively insignificant impact on the recoveries of the company or the rates of its customers.

Q. Does the working capital factor compensate Northern for the large variations in volume and price that occur in gas use for summer or winter seasons as compared to the average?

A. No it does not. The calculation for interest on deferred collections compensates Northern for those swings. Together, the mechanisms in the approved COG method reasonably compensate Northern for its average working capital needs and adjust appropriately for the monthly volumetric changes and price impacts, particularly throughout the winter season, that impact collection and cost levels throughout the year.

Q. With a broad brush, Mr. McCluskey applies his reasoning for the default service adjustment clause for electric utilities to the cost of gas adjustment clause for gas utilities. Do you agree with this comparison?

A. I have had very little time to examine the settlements to which Mr. McCluskey refers and

completely unfamiliar with them. Northern is a natural gas company, not an electric company. While Staff referenced the Unitil settlement in the informal setting and provided us with the Unitil Staff Report on Unitil's default service clause, Staff has not produced any information regarding the Granite State settlement or the PSNH settlement. However, it is my initial impression that the large volumetric and pricing changes that occur in the gas industry throughout the winter months make its 30-year old clause justifiable and distinguishable from any electric company adjustment mechanism, especially one that recovers an industry's pre-bid generation costs or transmission costs for essentially high, even and relatively constant system demand. Further, it is my clear understanding that the analysis that led to the Unitil settlement was based on a hypothetical / simplified example of purchasing and charging for the same volume of energy every day (and month). Because Northern purchased supply and metered sales volumes are **not** the same is the precise reason why Northern should and needs to continue to calculate carrying costs on monthly under or over collections of gas costs. Northern would simply need additional time to determine whether the Granite State and PSNH settlements and resulting collection clauses are applicable, if at all, if they in any way influence a decision on modifying Northern's COG mechanism.

Q. Has Northern tried to perform its own analysis on how changing the interest calculation from using actual as-billed billing month revenues to accrued calendar month revenues impacts interest recovery?

A. Yes. Northern first provided an analysis of calculating interest on under or over collections using both calendar month and as-billed billing month collection to Staff in

response to Staff 2-7 in DG 06-129 filed on December 1, 2006. This schedule was discussed with Staff at a technical session on December 5, 20065. Later, Northern modified this analysis and provide it to, and discussed with, Staff at another technical session on March 1, 2006. Finally, Northern modified the "March 1" analysis shortly after this technical session. Schedule JAF-1 is a 4-page analysis, using actual November 2005 through October 2006 gas cost activity, shows the following:

Page 1: Using Calendar Month, the interest calculation on the monthly under/over collection balance for both the Winter and Summer periods, showing a total (annual) interest of $15,702;

Page 2: Using Billing Month, the interest calculation on the monthly under/over collection balance for both the Winter and Summer periods, showing a total (annual) interest of $59,092, and the difference in both methods of $(43,390);

Page 3: A Cash Flow Interest calculation using the 6.33 test year net lag days, showing a cash flow interest need of $109,995; and

Page 4: A summary schedule showing, at the lower section, that: (a) using calendar month accrual revenues under recovers the cash flow interest by $14,339; and (b) using billing month as-billed revenues over recovers the cash flow interest by $31,600. The resulting difference is $45,939.

Q. Mr. Ferro, what can you conclude from this analysis?

A. In short, this analysis illustrates that there is no conclusive evidence that it is appropriate to modify the COG mechanism to use accrual calendar month revenues. Considering the inconclusive results of this analysis coupled with the more qualitative reasoning that

Northern's lead-lag study and resulting working capital provision is not designed to capture the carrying cost needs associated monthly mismatches of actual costs and collections, there is no grounds to modify the COG mechanism to use accrued calendar month collections.

Q. Mr. McCluskey asserts that electric utilities Unitil, National Grid and PSNH have accepted accrual accounting under Commission-approved settlements for default service and transmission rates. Can you comment on this?

A. I cannot see how electric company settlements regarding new adjustment clauses can be binding upon any natural gas company, let alone Northern. Moreover, such settlements on unrelated matters, in my mind, do not justify a change in the calculation of a 30-year COG. However, Northern needs more time to see if these settlements have any applicability. Frankly, I can't say to the Commission whether these adjustment mechanisms are the same or different. I am a specialist in regulatory matters for gas utilities. I think that other regulated industries' newly commenced cost recovery mechanisms, created through settlement, cannot be compared with ours and if they are, the proponent of them should bear the burden to demonstrate they are apples to apples.

Q. Finally, Mr. Ferro, is it simple enough for the Staff to simply state that all it wants is a restart of the COG using the accrual method?

A. No. The Staff attempts to develop its argument that Northern is over-collecting by creating a calculation out of whole cloth that in the next breath it disavows as an estimate to be treated with caution. Testimony at page 8, and n. 4. The fact is that the accrual

method does not compare apples to apples. It fictitiously attributes revenues that the Company has not received against a full month of actual costs. The billing month method, historically and precedentially approved by the Commission year after year, matches actual costs with actual revenues.

Q. Can you demonstrate this by an example?

A. Yes. Mr. McCluskey has asserted that there is a 15.2 lag day built into Northern's interest on under/over collections because Northern billed its customers and received payments throughout a month. However, this assertion is incorrect. As previously explained, Northern has only billed customers for (on average) 1/2 month of that month's gas costs. For instance, Cycle 1 customers will not even be billed for 29 days of that month's consumption until early the next month. The other ½ month of collections that Northern uses in its under/over collection and associated interest calculation are those related to the previous month gas sue that is being billed in the current month. The approved COG calculation, in using actual billing month sales and associated revenues appropriately applies actual gas cost collections to actual calendar month costs.

Q. How does this relate back to Staff's claim of over or double collection?

A. The mismatching due to the actual way that customers use the gas commodity (incurring costs for the Company through this use) and the way that the Company bills each month, or in other words, the mismatch each month of the associated revenues and costs, is an under/over collection for gas utilities that in reality generates the need for recovery of carrying costs on that under/over collection.

Q. Does Staff seek any additional changes to the mechanism in its Testimony?

A. Yes. Mr. McCluskey asserts that Northern should use the short term debt interest rate in the calculation of Working Capital expense associated with gas costs rather than the approved pre-tax cost of capital used in Northern's last general rate case, DG 01-182. His reasoning is primarily that Northern is not at risk of recovering its gas costs. First, with respect to Mr. McCluskey's reasoning, Northern is not "risk free" in its commodity contracting decisions. The Commission can always review Northern's decisions for prudence and as a result, Northern bears much more risk than even the electric utilities for its supply purchase decisions. The other reason why changing the interest rate in the Working Capital calculation is inappropriate relates to the cost, as the COG is designed or intended to recover Northern's true costs. Northern's constant and continuous position of funding its gas supply purchases is a permanent or long-term funding cost need. Thus, as with Northern's other constant, long-term, funding requirements, the cost of capital is Northern's true working capital cost on purchased gas. In addition and in connection with this cost of funding, lenders, i.e., the financial community, would not expect to have available a lower borrowing rate for this need as compared to the other or remaining funding needs to operate the business.

Q. Do you have any additional concerns about Staff's position?

A. Yes. I am unclear as to the effect of their conclusions upon the calculation of Northern's COG rates, whether for this period or for application in the future.

Q. Do you have any final thoughts?

A. Yes. It is my belief that the COG has been appropriately calculated for more than t 30 years, and that a modification would unfairly impact Northern's recovery of or compensation for funding monthly under-collections or over-state any over-collection position and resulting use of funds and associated carrying cost "credit". Northern asks the Commission to reject Staff's position and once again approve the COG calculation.

Q. Does this conclude your testimony?

A. Yes it does.

NORTHERN UTILTIES, INC. - New Hampshire Division
November 2005 - October 2006 PEAK
Analysis of Interest on Over/Undercollection-Calendar Month vs. Billing Month
Actuals

	November	December	January 2006	February	March	April	May	June	July	August	September	October	Total	
WINTER PERIOD														
CALENDAR MONTHS														
Volumes	3,819,873	6,432,626	9,209,011	3,768,790	6,187,779	2,560,017	0	0	0	0	0	0	31,978,096	
Per Settlement in DG05-080	*													
Winter Period Account Beginning Balance	$ 1,205,898	$ 1,406,532	$ 936,309	$ (3,015,806)	$ 1,182,887	$ 1,023,250	$ 11,628	$ 208,178	$ 424,429	$ 643,108	$ 798,909	$ 1,020,163	$ 1,205,898	
Plus: Cost of Firm Gas (Schedule 4)	$ 5,142,673	$ 7,985,684	$ 8,304,079	$ 7,506,372	$ 6,407,299	$ 2,413,891	$ 195,826	$ 214,143	$ 215,022	$ 150,861	$ 215,022	$ 215,022	$ 38,965,896	
Less: Reported Collections (Schedule 3)	**$ (4,949,095)**	$ (8,462,235)	$ (12,250,147)	$ (3,302,349)	$ (6,573,352)	$ (3,428,737)	$ -	$ -	$ -	$ -	$ -	$ -	$ (38,965,914)	$ (18)
	- Full month													
Winter Period Ending Balance	$ 1,399,475	$ 929,981	$ (3,009,758)	$ 1,188,217	$ 1,016,834	$ 8,404	$ 207,454	$ 422,322	$ 639,451	$ 793,969	$ 1,013,931	$ 1,235,186	$ 1,205,880	
Month's Average Balance	$ 1,302,687	$ 1,168,256	$ (1,036,725)	$ (913,794)	$ 1,099,860	$ 515,827	$ 109,541	$ 315,250	$ 531,940	$ 718,539	$ 906,420	$ 1,127,674	$ 5,845,476	
Interest Rate (Prime Rate)	6.50%	6.50%	7.00%	7.00%	7.00%	7.50%	7.93%	8.02%	8.25%	8.25%	8.25%	8.25%		
Interest Applied	$ 7,056	$ 6,328	$ (6,048)	$ (5,330)	$ 6,416	$ 3,224	$ 724	$ 2,107	$ 3,657	$ 4,940	$ 6,232	$ 7,753	$ 37,058	
Winter Period Account Ending Balance	$ 1,406,532	$ 936,309	$ (3,015,806)	$ 1,182,887	$ 1,023,250	$ 11,628	$ 208,178	$ 424,429	$ 643,108	$ 798,909	$ 1,020,163	$ 1,242,938	$ 1,242,938	
Average Monthly Balance													**$ 487,123**	
BILLING MONTHS														
Volumes	1,254,534	4,972,802	7,042,716	6,190,342	6,762,855	4,293,546	1,461,301	0	0	0	0	0	31,978,096	
Per Settlement in DG05-080	*													
Winter Period Account Beginning Balance	$ 1,205,898	$ 4,753,502	$ 6,257,106	$ 5,456,895	$ 5,512,105	$ 4,538,324	$ 2,033,096	$ 365,207	$ 582,506	$ 802,273	$ 959,168	$ 1,181,524	$ 1,205,898	
Plus: Cost of Firm Gas (Schedule 4)	$ 5,142,673	$ 7,985,684	$ 8,304,079	$ 7,506,372	$ 6,407,299	$ 2,413,891	$ 195,826	$ 214,143	$ 215,022	$ 150,861	$ 215,022	$ 215,022	$ 38,965,896	
Less: Reported Collections (Schedule 3)	**$ (1,611,166)**	$ (6,511,820)	$ (9,138,357)	$ (7,483,062)	$ (7,410,309)	$ (4,939,591)	$ (1,871,614)	$ -	$ -	$ -	$ -	$ -	$ (38,965,917)	$ (21)
	- Prorated Month													
Winter Period Ending Balance	$ 4,737,405	$ 6,227,366	$ 5,422,829	$ 5,480,205	$ 4,509,095	$ 2,012,624	$ 357,308	$ 579,350	$ 797,529	$ 953,134	$ 1,174,190	$ 1,396,546	$ 1,205,877	
Month's Average Balance	$ 2,971,652	$ 5,490,434	$ 5,839,967	$ 5,468,550	$ 5,010,600	$ 3,275,474	$ 1,195,202	$ 472,278	$ 690,018	$ 877,703	$ 1,066,679	$ 1,289,035	$ 33,647,592	
Interest Rate (Prime Rate)	6.50%	6.50%	7.00%	7.00%	7.00%	7.50%	7.93%	8.02%	8.25%	8.25%	8.25%	8.25%		
Interest Applied	$ 16,096	$ 29,740	$ 34,066	$ 31,900	$ 29,229	$ 20,472	$ 7,898	$ 3,156	$ 4,744	$ 6,034	$ 7,333	$ 8,862	$ 199,531	
Winter Period Account Ending Balance	$ 4,753,502	$ 6,257,106	$ 5,456,895	$ 5,512,105	$ 4,538,324	$ 2,033,096	$ 365,207	$ 582,506	$ 802,273	$ 959,168	$ 1,181,524	$ 1,405,408	$ 1,405,408	
Average Monthly Balance													**$ 2,588,276**	
Interest Calculation Difference	$ (9,040)	$ (23,412)	$ (40,114)	$ (37,230)	$ (22,813)	$ (17,248)	$ (7,174)	$ (1,049)	$ (1,087)	$ (1,094)	$ (1,102)	$ (1,109)	$ (162,473)	

* Set beginning balance at zero to eliminate any impact on interest calculation due to out-of-period costs.

Billing Month:		Check	
Winter Factor to Balance Rev & Exp, to end with a zero under/over coll balance	1.02236	1.0000005	=> (Total Costs - Collections) / Costs

Calendar Month:			
Winter Factor to Balance Rev & Exp, to end with a zero under/over coll balance	1.02236	1.0000005	=> (Total Costs - Collections) / Costs

NORTHERN UTILTIES, INC. - New Hampshire Division
November 2005 - October 2006 OFF PEAK
Analysis of Interest on Over/Undercollection-Calendar Month vs. Billing Month
Actuals

SUMMER PERIOD	November	December	January 2006	February	March	April	May	June	July	August	September	October	November	Total
CALENDAR MONTHS														
Volumes		0	0	0	0	0	2,671,906	1,404,385	1,070,355	1,197,235	1,248,641	2,161,855		9,754,377
Per Settlement in DG05-080														
Summer Period Account Beginning Balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (1,044,444)	$ (1,082,146)	$ (817,040)	$ (814,873)	$ (610,795)	$ (29,766)	
Plus: Cost of Firm Gas (Schedule 4)	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,944,852	$ 1,287,948	$ 1,314,273	$ 1,173,138	$ 1,540,268	$ 2,864,147		10,124,626
Less: Reported Collections (Schedule 3)	$ -	$ -	$ -	$ -	$ -	$ -	**$ (2,985,857)**	$ (1,318,567)	$ (1,042,661)	$ (1,165,380)	$ (1,331,306)	$ (2,280,924)		(10,124,694)
							- Full Month							
Summer Period Ending Balance	$ -	$ -	$ -	$ -	$ -	$ -	$ (1,041,005)	$ (1,075,064)	$ (810,534)	$ (809,283)	$ (605,911)	$ (27,571)	$ (29,766)	$ (68)
Month's Average Balance	$ -	$ -	$ -	$ -	$ -	$ -	$ (520,502)	$ (1,059,754)	$ (946,340)	$ (813,162)	$ (710,392)	$ (319,183)	$ (29,766)	(4,399,099)
Interest Rate (Prime Rate)	6.50%	6.50%	7.00%	7.00%	7.00%	7.50%	7.93%	8.02%	8.25%	8.25%	8.25%	8.25%	8.25%	
Interest Applied	$ -	$ -	$ -	$ -	$ -	$ -	$ (3,440)	$ (7,083)	$ (6,506)	$ (5,590)	$ (4,884)	$ (2,194)	$ (205)	$ (29,902)
Summer Period Account Ending Balance	$ -	$ -	$ -	$ -	$ -	$ -	$ (1,044,444)	$ (1,082,146)	$ (817,040)	$ (814,873)	$ (610,795)	$ (29,766)	$ (29,970)	$ (29,970)
Average of Month's Average Balance														$ (338,392)
BILLING MONTHS														
Volumes	0	0	0	0	0	0	1,272,403	1,996,319	1,187,676	1,072,847	1,203,754	1,438,722	1,582,656	9,754,377
Per Settlement in DG05-080							*							
Summer Period Account Beginning Balance	$ -	$ (1,955,285)	$ (1,965,876)	$ (1,977,344)	$ (1,988,879)	$ (2,000,480)	$ (2,012,983)	$ (1,501,562)	$ (2,323,078)	$ (2,180,909)	$ (2,066,589)	$ (1,757,053)	$ (418,056)	
Plus: Cost of Firm Gas (Schedule 4)							$ 1,944,852	$ 1,287,948	$ 1,314,273	$ 1,173,138	$ 1,540,268	$ 2,864,147	$ -	10,124,626
Less: Reported Collections (Schedule 3)	**$ (1,950,004)**						$ (1,421,857)	$ (2,096,726)	$ (1,156,675)	$ (1,044,267)	$ (1,217,633)	$ (1,517,699)	$ (1,669,840)	(10,124,696)
(Oct '05 Prorated Vols of 1,761,543)	***(2nd half of Summer 05)***						**- Prorated Month**							
Summer Period Ending Balance	$ (1,950,004)	$ (1,955,285)	$ (1,965,876)	$ (1,977,344)	$ (1,988,879)	$ (2,000,480)	$ (1,489,988)	$ (2,310,340)	$ (2,165,480)	$ (2,052,038)	$ (1,743,954)	$ (410,604)	$ (2,087,896)	$ (70)
Month's Average Balance	$ (975,002)	$ (1,955,285)	$ (1,965,876)	$ (1,977,344)	$ (1,988,879)	$ (2,000,480)	$ (1,751,486)	$ (1,905,951)	$ (2,244,279)	$ (2,116,474)	$ (1,905,271)	$ (1,083,828)	$ (1,252,976)	(22,148,130)
Interest Rate (Prime Rate)	6.50%	6.50%	7.00%	7.00%	7.00%	7.50%	7.93%	8.02%	8.25%	8.25%	8.25%	8.25%	8.25%	
Interest Applied	$ (5,281)	$ (10,591)	$ (11,468)	$ (11,535)	$ (11,602)	$ (12,503)	$ (11,574)	$ (12,738)	$ (15,429)	$ (14,551)	$ (13,099)	$ (7,451)	$ (8,614)	$ (146,436)
Summer Period Account Ending Balance	$ (1,955,285)	$ (1,965,876)	$ (1,977,344)	$ (1,988,879)	$ (2,000,480)	$ (2,012,983)	$ (1,501,562)	$ (2,323,078)	$ (2,180,909)	$ (2,066,589)	$ (1,757,053)	$ (418,056)	$ (2,096,510)	$ (146,506)
Average of Month's Average Balance														$ (1,778,702)
Interest Calculation Difference	$ 5,281	$ 10,591	$ 11,468	$ 11,535	$ 11,602	$ 12,503	$ 8,135	$ 5,655	$ 8,923	$ 8,960	$ 8,215	$ 5,257	$ 8,410	$ 116,534
WINTER PERIOD Interest Difference														$ (162,473)
TOTAL NOV 05 - OCT 06 Interest Difference														$ (45,939)

* Set beginning balance at zero to eliminate any impact on interest calculation due to out-of-period costs.

Billing Month:		Check
Summer Factor to Balance Rev & Exp, to	1.11386	1.0000069
end with a zero under/over coll balance		

Calendar Volumes	41,732,473
Billing Volumes	41,732,473
Difference	-

NORTHERN UTILTIES, INC. - New Hampshire Division
November 2005 - January 2006
Analysis of Actual Cash Flow

	November	December	January 2006	February	March	April	May	June	July	August	September	October	November	December	Total
Days	30	31	31	28	31	30	31	30	31	31	30	31	30	31	
Since billings are performed on a Billing Month Basis, the Calendar Month calculation is irrelevant															
CALENDAR MONTHS															
Volumes	3,819,873	6,432,626	9,209,011	3,768,790	6,187,779	2,560,017	2,671,906	1,404,385	1,070,355	1,197,235	1,248,641	2,161,855	0		41,732,473
Account Beginning Balance															
Plus: Cost of Firm Gas (Schedule 4) (30 Day Lag)															
Less: Expected Collections (Schedule 3)															
Less: Expected Collections (Schedule 3)															
Ending Balance															
Month's Average Balance															
Interest Rate (Prime Rate)	6.50%	6.50%	7.00%	7.00%	7.00%	7.50%	7.93%	8.02%	8.25%	8.25%	8.25%	8.25%	8.25%	8.25%	
Interest Applied	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Winter Period Account Ending Balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
BILLING MONTHS															
Volumes	1,254,534	4,972,802	7,042,716	6,190,342	6,762,855	4,293,546	2,733,704	1,996,319	1,187,676	1,072,847	1,203,754	1,438,722	1,582,656		41,732,473
	1/														
Account Beginning Balance	**$ 1,205,898**	$ 391,221	$ 4,501,642	$ 5,967,473	$ 5,203,086	$ 4,823,274	$ 3,057,958	$ (33,185)	$ (1,070,033)	$ (1,693,160)	$ (1,341,875)	$ (1,028,674)	$ (543,241)	$ 1,012,634	$ 391,221
Plus: Cost of Firm Gas (Schedule 4) (23.28 Day Lead) *	$ 1,151,959	$ 1,988,693	$ 2,067,984	$ 1,265,360	$ 1,595,624	$ 540,712	$ 48,767	$ 47,968	$ 53,548	$ 37,569	$ 48,165	$ 53,548			$ 8,899,895
Plus: Cost of Firm Gas (Sch. 4) (Prior Month remaining) *		$ 3,990,714	$ 5,996,991	$ 6,236,096	$ 6,241,012	$ 4,811,675	$ 1,873,180	$ 2,091,911	$ 1,454,123	$ 1,475,748	$ 1,286,430	$ 1,707,125	$ 3,025,622		$ 40,190,627
Less: Expected Collections (29.61 Day Lag) **	$ (20,945)	$ (291,982)	$ (409,752)	$ 430,276	$ (332,269)	$ (64,215)	$ (83,921)								$ (772,807)
Less: Expected Collections (Prior Month remaining) **		$ (1,590,221)	$ (6,219,838)	$ (8,728,605)	$ (7,913,338)	$ (7,078,040)	$ (4,875,376)	$ (1,787,693)							$ (38,193,110)
Less: Expected Collections (29.61 Day Lag) **							$ (63,754)	$ (27,257)	$ (51,864)	$ (46,824)	$ (15,829)	$ (68,052)	$ (21,708)		$ (295,288)
Less: Expected Collections (Prior Month remaining) **								$ (1,358,103)	$ (2,069,468)	$ (1,104,811)	$ (997,444)	$ (1,201,804)	$ (1,449,647)	$ (1,648,132)	$ (9,829,408)
Summer-Nov 05 prorated collections (29.61/31)	***$ (1,950,004)***														
Ending Balance	$ 386,907	$ 4,488,427	$ 5,937,027	$ 5,170,600	$ 4,794,115	$ 3,033,406	$ (43,146)	$ (1,066,359)	$ (1,683,694)	$ (1,331,477)	$ (1,020,553)	$ (537,856)	$ 1,011,026	$ (635,498)	$ - $ 391,131
Month's Average Balance	$ 796,403	$ 2,439,824	$ 5,219,335	$ 5,569,036	$ 4,998,601	$ 3,928,340	$ 1,507,406	$ (549,772)	$ (1,376,864)	$ (1,512,319)	$ (1,181,214)	$ (783,265)	$ 233,892	$ 188,568	$ - $ 19,477,971
Interest Rate (Prime Rate)	6.50%	6.50%	7.00%	7.00%	7.00%	7.50%	7.93%	8.02%	8.25%	8.25%	8.25%	8.25%	8.25%	8.25%	
Interest Applied	$ 4,314	$ 13,216	$ 30,446	$ 32,486	$ 29,159	$ 24,552	$ 9,961	$ (3,674)	$ (9,466)	$ (10,397)	$ (8,121)	$ (5,385)	$ 1,608	$ 1,296	$ - $ 109,995
Ending Balance	$ 391,221	$ 4,501,642	$ 5,967,473	$ 5,203,086	$ 4,823,274	$ 3,057,958	$ (33,185)	$ (1,070,033)	$ (1,693,160)	$ (1,341,875)	$ (1,028,674)	$ (543,241)	$ 1,012,634	$ (634,202)	$ - $ 501,126
Average of Month's Average Balance															**$ 1,623,164**

1/ May - October Demand Costs deferred to Winter Period. Every Winter period begins with these "Summer Deferred Costs".

* The 23.28 Cost lead from Billing to Paying the bill is reflected by reflecting a portion of the costs in the month equal to # days in month minus 23.28 divided by # days in month. Remaining costs in 2nd month.

** Similarly, the 29.61 Revenue lag from Billing to Customers Paying the bill is reflected by reflecting a portion of the collections in current mo. equal to (# days in month less 29.61) / # days in month. Remaining collections in 2nd month.

NORTHERN UTILTIES, INC. - New Hampshire Division
Analysis of Interest on Over/Undercollection-Calendar Month vs. Billing Month
Proof

The Northern Utilities COGC provides working cash through two mechanisms, the lead lag study's allowance and the interest on over/under collection. If the COGC is wor the working capital allowances from these two mechanisms, when summed, should equal the stockholder's cash requirements derived from an analysis of actual cash flow provided below, we have identified the average monthly balance upon which carrying charges are permitted under the COGC and in accordance with the lead-lag study's r that to the average monthly balance required on a cash basis. Two scenarios are shown for the over/under collection calculation, one using calendar month revenues (acc and one based on billing month, as-billed, revenues.

	Calendar Month Basis	Billing Month Basis	(Billing vs. Cal. Month) Difference
Over/Under Collection Analysis			
Winter Average Balance	$ 487,123	$ 2,588,276	$ 2,101,153
Summer Average Balance	$ (338,392)	$ (1,778,702)	$ (1,440,310)
Total	$ 148,731	$ 809,574	$ 660,843
Lead-Lag W/C Allowance			
Winter Cost of Gas	$ 38,965,896	$ 38,965,896	$ -
Summer Cost of Gas	$ 10,124,626	$ 10,124,626	$ -
Cost of Gas	$ 49,090,522	$ 49,090,522	$ -
Average Daily Cost of Gas	$ 134,495	$ 134,495	$ -
Lead-Lag Net Days	6.33	6.33	$ -
W/C for Net Lag	$ 851,351	$ 851,351	$ -
Monthly Average W/C Subject to Interest	$ 1,000,081	$ 1,660,925	$ 660,843
Cash flow Analysis			
Actual Average Monthly Cash Required	$ 1,623,164	$ 1,623,164	$ -
Variance or Over Collection (Under Collection)	**$ (623,083)**	**$ 37,760**	**$ 660,843**
Carrying Charge Impact @ 7.45%	$ (46,419)	$ 2,813	$ 49,232

Cash Flow Interest vs. Actual Interest on Deferred and Wkg Cap Recovery - Nov 05 - Oct 06

		Cal. Mo	Billing Mo.
Interest re: Cash Flow - Page 3		109,995	$ 109,995
Interest on Deferred Gas Cost	Winter	37,058	$ 199,531
	Summer	(29,902)	$ (146,436)
	Total	7,156	$ 53,095
Actual Working Capital Recovery	Winter	73,750	$ 73,750
(Nov 05 - Oct 06)	Summer	14,750	$ 14,750
	Total	88,500	$ 88,500
Total Interest Recovery (Def & WC)		$ 95,656	$ 141,595
Difference (Int on Def & WC vs. Cash Flow Int)		$ (14,339)	$ 31,600