June 26th, 2025

Edmund Kilbridge
Southern Illinois Regional Plant
De Soto, IL

Edmund,

The following is a summary of findings from the June 2025 BASELINE monthly vibration survey at the Southern Illinois Regional site.

*QualiTest*® uses a four-step rating system for defects.

**Class I:** Defect is present, but effect on reliability is not clear; no immediate action is required. Continue to normally monitor.

**Class II:** Defect (s) present that may cause problem in long term (2-6 months). Repair during normal maintenance scheduling. Continue to monitor.

**Class III:** Defect (s) present that may cause failure in short term (less than 2 months). This should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.

**Class IV:** Defect (s) present that makes continued reliability unpredictable, and possibility of secondary damage is high. Repairs should be made ASAP. An unscheduled shutdown should be considered for repairs

# *Defects*

## Sales Gas Comp1 Gas Cooler Fan   <mark>CLASS II</mark>
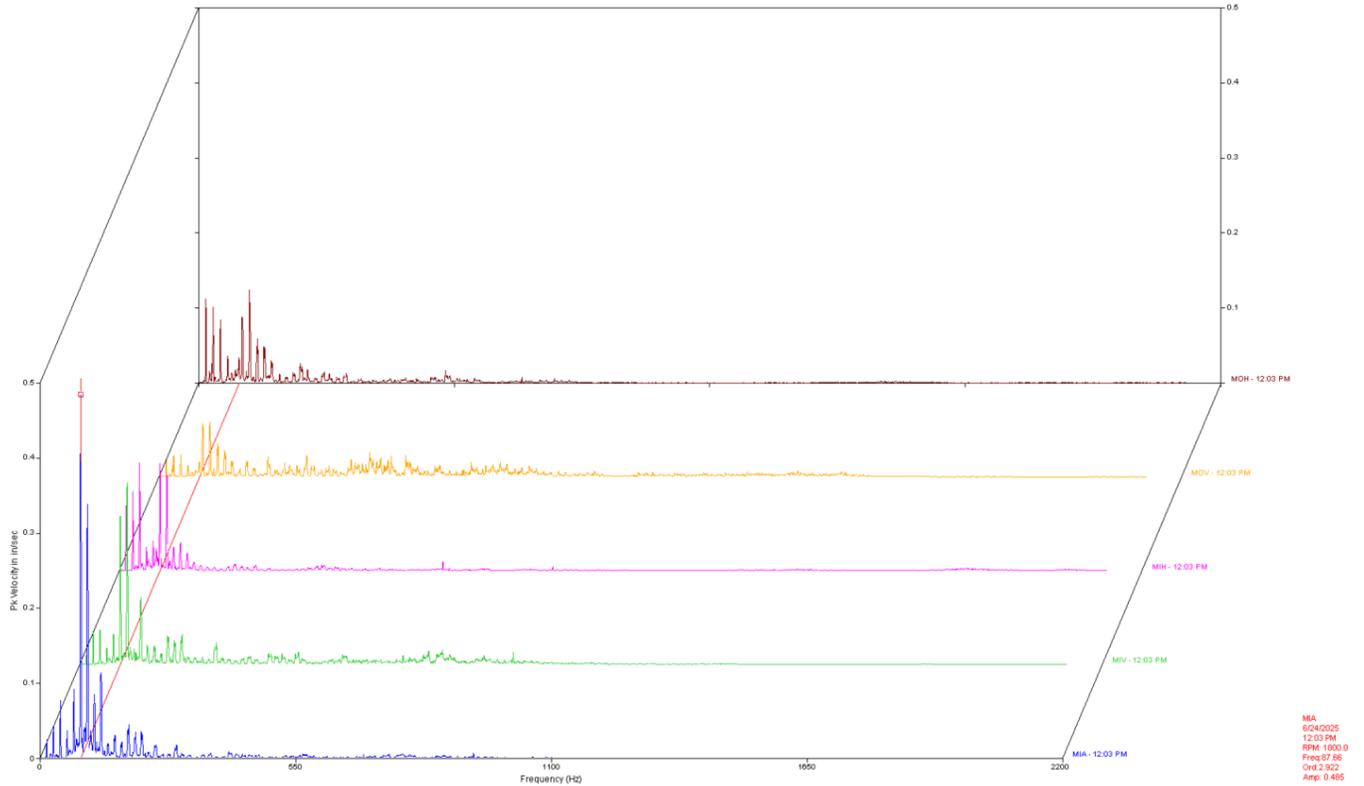
## <span style="color:red">Observations:</span>
Data above is the motor multi-point spectral waterfall. There appear to be several harmonics and a dominant peak that appears to be non-synchronous in the motor data and especially in the axial direction.

## <span style="color:red">Recommendations:</span>
There may be an issue with the motor bearings according to spectral data. We will need to strobe the motor next visit to confirm speed. We also need to establish a better trend; however, the high amplitudes and presence of these type of peaks is concerning. Motor may need attention soon. We will monitor this closely next survey.

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                Abbreviated Last Measurement Summary
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           Database:   SOUTHERN ILLINOIS.rbm
           Area:       SOUTHERN ILLINOIS


    MEASUREMENT POINT              OVERALL LEVEL          HFD / VHFD
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    VRCOMPOPM  - VAC/RINSECOMP601 OIL PMP MTR  (24-Jun-25)
                                   OVERALL LEVEL    1K-20KHz
          MOH                       .054 In/Sec       .570 G-s
          MOP                      .0096 In/Sec
          MOV                       .165 In/Sec       .307 G-s
          MIH                       .046 In/Sec       .732 G-s
          MIP                       .012 In/Sec
          MIV                       .095 In/Sec       .176 G-s
          MIA                       .076 In/Sec       .213 G-s


    VRCOCFM    - V/R COMP601 OILCOOLFAN MTR    (24-Jun-25)
                                   OVERALL LEVEL    1K-20KHz
          MOH                       .190 In/Sec       .347 G-s
          MOP                      .0063 In/Sec
          MOV                       .136 In/Sec       .197 G-s
          MIH                       .024 In/Sec       .913 G-s
          MIP                       .017 In/Sec
          MIV                       .079 In/Sec       .146 G-s
          MIA                       .164 In/Sec       .135 G-s


    VACCOMP601 - VAC COMPRESSOR 601            (24-Jun-25)
                                   OVERALL LEVEL    1K-20KHz
          MOH                       .034 In/Sec       .610 G-s
          MOP                      .0046 In/Sec
          MOV                       .041 In/Sec       .122 G-s
          MIH                       .071 In/Sec       .731 G-s
          MIP                      .0083 In/Sec
          MIV                       .076 In/Sec       .254 G-s
          MIA                       .054 In/Sec       .189 G-s
          1IH                       .041 In/Sec       .274 G-s
          1IP                      .0028 In/Sec
          1IV                       .127 In/Sec       .111 G-s
          1IA                       .066 In/Sec       .139 G-s
          1OH                       .069 In/Sec       .893 G-s
          1OP                      .0089 In/Sec
          1OV                       .116 In/Sec       .292 G-s
          1OA                       .058 In/Sec       .239 G-s
          2IH                       .046 In/Sec       .210 G-s
          2IP                      .0017 In/Sec
          2IV                       .105 In/Sec       .145 G-s
          2IA                       .048 In/Sec       .101 G-s
          2OH                       .065 In/Sec       .328 G-s
          2OP                      .0024 In/Sec
          2OV                       .156 In/Sec       .208 G-s
          2OA                       .050 In/Sec       .224 G-s


    RNSCOMP601 - RINSE COMPRESSOR 601          (24-Jun-25)
                                   OVERALL LEVEL    1K-20KHz
          MOH                       .069 In/Sec      1.288 G-s
          MOP                       .018 In/Sec
          MOV                       .275 In/Sec       .212 G-s
          MIH                       .084 In/Sec      1.646 G-s
          MIP                       .016 In/Sec
          MIV                       .151 In/Sec       .333 G-s
          MIA                       .042 In/Sec       .256 G-s
          1IH                       .093 In/Sec       .517 G-s
          1IP                      .0049 In/Sec
          1IV                       .226 In/Sec       .066 G-s
          1IA                       .113 In/Sec       .268 G-s
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        1OH                    .124 In/Sec      1.300 G-s
        1OP                    .015 In/Sec
        1OV                    .241 In/Sec       .371 G-s
        1OA                    .166 In/Sec       .426 G-s
        2IH                    .115 In/Sec      1.257 G-s
        2IP                    .016 In/Sec
        2IV                    .117 In/Sec       .179 G-s
        2IA                    .126 In/Sec       .157 G-s
        2OH                    .111 In/Sec       .809 G-s
        2OP                    .014 In/Sec
        2OV                    .165 In/Sec       .168 G-s
        2OA                    .122 In/Sec       .182 G-s


   STG2IFCOC  - STG2 INLETFEEDCOMP OILCOOLER  (24-Jun-25)
                          OVERALL LEVEL    1K-20KHz
        MOH                    .123 In/Sec       .540 G-s
        MOP                    .010 In/Sec
        MOV                    .242 In/Sec       .313 G-s
        MIH                    .031 In/Sec       .321 G-s
        MIP                    .0054 In/Sec
        MIV                    .039 In/Sec       .097 G-s
        MIA                    .099 In/Sec       .243 G-s


   STG2IFCOMP - STG2 INLET FEED COMPRESSOR   (24-Jun-25)
                          OVERALL LEVEL    1K-20KHz
        MOH                    .030 In/Sec       .911 G-s
        MOP                    .020 In/Sec
        MOV                    .059 In/Sec       .176 G-s
        MIH                    .036 In/Sec       .976 G-s
        MIP                    .014 In/Sec
        MIV                    .079 In/Sec       .221 G-s
        MIA                    .033 In/Sec       .106 G-s
        1IH                    .043 In/Sec       .311 G-s
        1IP                    .0045 In/Sec
        1IV                    .117 In/Sec       .136 G-s
        1IA                    .079 In/Sec       .165 G-s
        1OH                    .092 In/Sec      1.658 G-s
        1OP                    .017 In/Sec
        1OV                    .161 In/Sec       .504 G-s
        1OA                    .083 In/Sec       .254 G-s
        2IH                    .045 In/Sec      1.264 G-s
        2IP                    .024 In/Sec
        2IV                    .105 In/Sec       .210 G-s
        2IA                    .047 In/Sec       .181 G-s
        2OH                    .050 In/Sec       .803 G-s
        2OP                    .0085 In/Sec
        2OV                    .109 In/Sec       .335 G-s
        2OA                    .048 In/Sec       .165 G-s


   STG1IFCOC  - STG1 INLETFEEDCOMP OILCOOLER  (24-Jun-25)
                          OVERALL LEVEL    1K-20KHz
        MOH                    .021 In/Sec       .201 G-s
        MOP                    .0031 In/Sec
        MOV                    .018 In/Sec       .153 G-s
        MIH                    .011 In/Sec       .220 G-s
        MIP                    .0037 In/Sec
        MIV                    .019 In/Sec       .061 G-s
        MIA                    .032 In/Sec       .110 G-s


   STG1IFCOMP - STG1 INLET FEED COMPRESSOR   (24-Jun-25)
                          OVERALL LEVEL    1K-20KHz
        MOH                    .064 In/Sec      1.529 G-s
        MOP                    .020 In/Sec
        MOV                    .040 In/Sec       .385 G-s
        MIH                    .061 In/Sec      2.089 G-s
        MIP                    .026 In/Sec
        MIV                    .048 In/Sec       .434 G-s
        MIA                    .022 In/Sec       .208 G-s
        1IH                    .030 In/Sec       .225 G-s
        1IP                    .0021 In/Sec
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        1IV                    .095 In/Sec          .067 G-s
        1IA                    .047 In/Sec          .104 G-s
        1OH                    .069 In/Sec         1.655 G-s
        1OP                    .024 In/Sec
        1OV                    .057 In/Sec          .352 G-s
        1OA                    .042 In/Sec          .291 G-s
        2IH                    .050 In/Sec          .695 G-s
        2IP                    .010 In/Sec
        2IV                    .082 In/Sec          .129 G-s
        2IA                    .051 In/Sec          .189 G-s
        2OH                    .068 In/Sec         1.206 G-s
        2OP                    .014 In/Sec
        2OV                    .106 In/Sec          .175 G-s
        2OA                    .051 In/Sec          .213 G-s


SLSGSCMP1  - SALES GAS COMPRESSOR 1        (24-Jun-25)
                              OVERALL LEVEL    1K-20KHz
        MOH                    .203 In/Sec          .895 G-s
        MOP                    .017 In/Sec
        MOV                    .275 In/Sec          .334 G-s
        MIH                    .208 In/Sec         1.459 G-s
        MIP                    .028 In/Sec
        MIV                    .105 In/Sec          .248 G-s
        MIA                    .135 In/Sec          .564 G-s
        C1H                    .317 In/Sec         2.240 G-s
        C1V                    .234 In/Sec          .407 G-s
        C1A                    .339 In/Sec         1.918 G-s
        C2H                    .349 In/Sec          .953 G-s
        C2V                    .372 In/Sec          .813 G-s
        C2A                    .407 In/Sec          .153 G-s
        C3H                    .433 In/Sec         1.274 G-s
        C3V                    .578 In/Sec         1.074 G-s
        C3A                    .322 In/Sec          .334 G-s


SGC1GSCLFN - SALESGAS COMP1 GAS COOL FAN  (24-Jun-25)
                              OVERALL LEVEL    1K-20KHz
        MOH                    .356 In/Sec          .500 G-s
        MOP                    .020 In/Sec
        MOV                    .308 In/Sec          .603 G-s
        MIH                    .367 In/Sec          .834 G-s
        MIP                    .019 In/Sec
        MIV                    .523 In/Sec          .347 G-s
        MIA                    .874 In/Sec          .272 G-s


SLSGSCMP2  - SALES GAS COMPRESSOR 2        (24-Jun-25)
                              OVERALL LEVEL    1K-20KHz
        MOH                    .147 In/Sec         1.125 G-s
        MOP                    .016 In/Sec
        MOV                    .097 In/Sec          .291 G-s
        MIH                    .245 In/Sec         1.555 G-s
        MIP                    .024 In/Sec
        MIV                    .451 In/Sec          .198 G-s
        MIA                    .163 In/Sec          .379 G-s
        C1H                    .121 In/Sec          .352 G-s
        C1V                    .106 In/Sec          .139 G-s
        C1A                    .117 In/Sec          .219 G-s
        C2H                    .191 In/Sec          .109 G-s
        C2V                    .116 In/Sec          .173 G-s
        C2A                    .160 In/Sec          .056 G-s
        C3H                    .334 In/Sec          .296 G-s
        C3V                    .144 In/Sec          .376 G-s
        C3A                    .152 In/Sec          .241 G-s


SGC2GSCLFN - SALESGAS COMP2 GAS COOL FAN  (24-Jun-25)
                              OVERALL LEVEL    1K-20KHz
        MOH                    .215 In/Sec          .427 G-s
        MOP                   .0067 In/Sec
        MOV                    .155 In/Sec          .273 G-s
        MIH                    .277 In/Sec          .287 G-s
        MIP                   .0028 In/Sec
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                MIV                   .232 In/Sec          .091 G-s
                MIA                   .299 In/Sec          .069 G-s

        AIRCOMP A  - AIR COMPRESSOR A                (24-Jun-25)
                                 OVERALL LEVEL       1K-20KHz
                MOH                   .073 In/Sec          .367 G-s
                MOP                  .0031 In/Sec
                MOV                   .114 In/Sec          .218 G-s
                MIH                   .055 In/Sec          .248 G-s
                MIP                  .0027 In/Sec
                MIV                   .114 In/Sec          .260 G-s
                MIA                   .108 In/Sec          .230 G-s
                1IH                   .056 In/Sec          .337 G-s
                1IP                  .0044 In/Sec
                1IV                   .084 In/Sec          .351 G-s
                1IA                   .087 In/Sec          .221 G-s
                1OH                   .052 In/Sec          .540 G-s
                1OP                  .0074 In/Sec
                1OV                   .076 In/Sec          .275 G-s
                1OA                   .094 In/Sec          .222 G-s
                2IH                   .061 In/Sec          .499 G-s
                2IP                  .0055 In/Sec
                2IV                   .077 In/Sec          .170 G-s
                2IA                   .097 In/Sec          .183 G-s
                2OH                   .088 In/Sec          .558 G-s
                2OP                  .0069 In/Sec
                2OV                   .083 In/Sec          .479 G-s
                2OA                   .109 In/Sec          .158 G-s

        AIRCMPADRY - AIR COMPRESSOR A DRYER          (24-Jun-25)
                                 OVERALL LEVEL       1K-20KHz
                MOH                   .073 In/Sec          .450 G-s
                MOV                   .030 In/Sec          .039 G-s
                MIH                   .016 In/Sec          .233 G-s
                MIV                   .020 In/Sec          .028 G-s
                MIA                   .045 In/Sec          .050 G-s

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     Clarification Of Vibration Units:
        Acc      -->  G-s      RMS
        Vel      -->  In/Sec   PK
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As always, it has been a pleasure to serve Southern Illinois Regional-Archaea Energy. If there are any comments or questions, do not hesitate to contact us.

Sincerely,

*Kevin W. Maxwell*
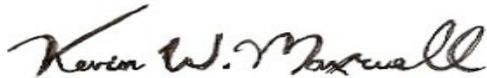
**ISO Certified Vibration Analyst, Category III**



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